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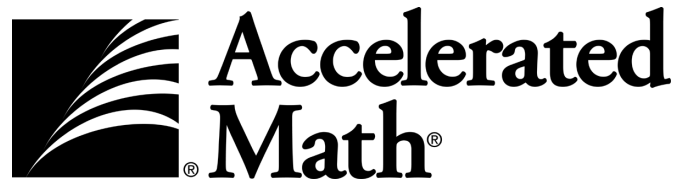


Grade 6

Standard, 1.2.3

Library Guide

Motivate Students to Master Every Math Objective, 1st Grade to Calculus.



Grade 6 Library Guide

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Welcome

Thank you for purchasing this Accelerated Math Library. Libraries include the objectives for a specific grade level, math subject, state requirements, or textbook. Each library includes enough objectives to cover a complete year of math. Libraries are designed to follow common curriculum guidelines and the content of widely used math textbooks.

Libraries are the source of the problems that appear on the assignments and tests you print for your classes. Within each library, closely related problems are grouped by objective. This *Library Guide* includes the topics covered by the library, the objectives related to each topic, and sample problems from each objective.

There are two types of libraries: standard libraries and Extended Response libraries. Extended Response libraries provide challenging problems and projects that emphasize problem-solving and higher-order thinking skills.

To install the library, use the instructions you received. You can also find instructions in the *Accelerated Math Software Manual*. If you have any questions about libraries or installation, please email us at answers@renlearn.com.

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Obj. 1 - Place value of digit in whole number (6+ digits)

1. Which is the place of the digit 6 in 321,645,978,123?
[A] ten-millions [B] hundred-billions
[C] hundred-millions [D] ten-billions
2. In 174,568,293, the digit 8 is in what place?
[A] hundreds [B] thousands [C] ten-thousands [D] millions
3. Find the place value of the digit 4 in the number 4,152,287,693,723.
[A] trillions [B] hundred-billions [C] hundreds [D] millions

Obj. 2 - Standard to expanded form (5+ digits)

4. The table below shows the five highest mountains in the world.

| Mountain | Height in Feet |
|-----------------------|----------------|
| Everest | 29,028 |
| Godwin Austen (K - 2) | 28,250 |
| Kanchenjunga | 28,208 |
| Lhotse | 27,890 |
| Makalu | 27,789 |

Write the height of Mt. Lhotse in expanded form.

- [A] $20,000 + 7,000 + 800 + 90$ [B] $27,000 + 890$
[C] $200,000 + 70,000 + 800 + 90$ [D] $20,000 + 7,000 + 700 + 80 + 9$
5. Write 5,446,217 in expanded form.
[A] $500,000 + 40,000 + 400 + 6$
[B] $5,000,000 + 400,000 + 40,000 + 6,000 + 200 + 10 + 7$
[C] $400,000 + 400,000 + 60,000 + 2,000 + 100 + 7$
[D] $5,000,000 + 400,000 + 60,000 + 6,000 + 700 + 10 + 2$

Topic 1 - Whole Number Concepts Part 1

6. Write 177,587 in expanded form.

[A] $100,000 + 70,000 + 7,000 + 500 + 80 + 7$

[B] $10,000 + 7,000 + 500 + 87$ [C] $10,000 + 7,000 + 700 + 50 + 7$

[D] $100,000 + 70,000 + 5,000 + 700 + 70 + 8$

Obj. 3 - Expanded to standard form (5+ digits)

7. Which shows $3,000,000 + 100,000 + 40,000 + 6,000 + 500 + 4$ in standard form?

[A] 3,105,104 [B] 3,151,004 [C] 3,146,054 [D] 3,146,504

8. Which shows $3,000,000 + 200,000 + 80,000 + 7,000 + 900 + 70 + 4$ in standard form?

[A] 4,009,774 [B] 3,224,074 [C] 3,287,974 [D] 3,287,794

9. Which shows $10,000,000 + 500,000 + 10,000 + 3,000 + 300 + 30 + 3$ in standard form?

[A] 10,513,333 [B] 105,016,033 [C] 10,153,333 [D] 6,010,633

Obj. 4 - Standard form to word name (5+ digits)

10. The table below shows the five tallest mountains in the world.

| Mountain | Height in Feet |
|-----------------------|----------------|
| Everest | 29,028 |
| Godwin Austen (K - 2) | 28,250 |
| Kanchenjunga | 28,208 |
| Lhotse | 27,890 |
| Makalu | 27,789 |

Write the height of Mt. Everest in words.

[A] two hundred ninety thousand, twenty-eight

[B] twenty-nine thousand, twenty-eight

[C] two hundred ninety-two thousand, eight

[D] two hundred ninety thousand, eight

Topic 1 - Whole Number Concepts Part 1

11. Use words to write 12,912,780.
- [A] twelve and nine hundred thousand, seven hundred and eighty
 - [B] twelve million, nine hundred twelve thousand, seven hundred eighty
 - [C] one thousand two, seven hundred eighty
 - [D] twelve million, nine hundred ten thousand, seven hundred eighty
12. Use words to write 700,507,561.
- [A] six hundred eighty-seven million, five hundred seven thousand, five hundred sixty-one
 - [B] seven hundred million, five hundred seven thousand, two hundred seventy-one
 - [C] seven hundred million, five hundred seven thousand, five hundred sixty-one
 - [D] seven hundred million, five hundred eight thousand, four hundred, five hundred sixty-one

Obj. 5 - Word name to standard form (5+ digits)

13. Write the number in standard form:
seven hundred nine thousand, five hundred twenty-one
- [A] 709,521 [B] 79,521 [C] 709,512 [D] 790,512
14. Mt. Mitchell, North Carolina is six thousand, six hundred eighty-four feet high.
Write this number in standard form.
- [A] 60,684 [B] 6,648 [C] 60,648 [D] 6,684
15. Write the number in standard form: eight billion, four hundred fifty-three million,
fifty-two thousand, seventy
- [A] 8,446,052,070 [B] 8,453,047,370
[C] 8,453,037,070 [D] 8,453,052,070
16. Write the number in standard form: five hundred twenty-three million, three hundred
twenty-nine thousand, three hundred fifty-three
- [A] 513,329,353 [B] 523,381,353 [C] 523,329,353 [D] 523,322,253

Topic 1 - Whole Number Concepts Part 1

Obj. 6 - Order whole numbers (6+ digits)

17. Which group of numbers is in order from *least to greatest*?

- [A] 1,257,781 2,266,638 2,770,182 3,661,210
[B] 3,661,210 2,770,182 2,266,638 1,257,781
[C] 2,266,638 2,770,182 3,661,210 1,257,781
[D] 2,770,182 3,661,210 1,257,781 2,266,638

18. Which group of numbers is in the correct order from *least to greatest*?

- [A] 72,962 133,698 103,330 [B] 88,832 81,691 74,550
[C] 103,330 72,962 133,698 [D] 74,550 81,691 88,832

19. Find the number that is between the two given numbers.

| | | |
|---------|--|---------|
| 504,341 | | 513,559 |
|---------|--|---------|

- [A] 504,323 [B] 513,565 [C] 510,112 [D] 513,577

Obj. 7 - Compare whole numbers (5+ digits)

20. Which of the following is a true statement?

- [A] $54,648 < 11,448$ [B] $63,432 < 17,280$
[C] $30,600 > 68,904$ [D] $41,040 > 32,400$

21. Which of the following will make the statement true?

$10,201 > \underline{\hspace{2cm}}$

- [A] 10,197 [B] 10,201 [C] 10,203 [D] none of these

Obj. 8 - Round whole numbers (4+ digits)

22. Round 6,526 to the nearest thousand.

- [A] 7,000 [B] 6,500 [C] 6,000 [D] 5,000

Topic 1 - Whole Number Concepts Part 1

23. Round 40,386 to the nearest thousand.
[A] 40,000 [B] 40,400 [C] 41,000 [D] 40,300
24. Round 89,142,171 to the nearest million.
[A] 88,000,000 [B] 79,000,000 [C] 89,000,000 [D] 91,000,000

Obj. 9 - Prime and composite numbers

25. Which of the following numbers is *not* composite?
[A] 5 [B] 25 [C] 35 [D] 15
26. Which of the following numbers is prime?
[A] 9 [B] 8 [C] 7 [D] 16
27. Which of the following shows a pair of prime numbers?
[A] 21, 27 [B] 31, 43 [C] 21, 43 [D] 27, 31
28. Which of the following numbers is prime?
[A] 51 [B] 47 [C] 35 [D] 21

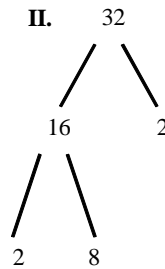
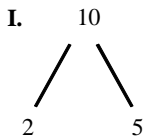
Obj. 10 - Factors of composite numbers

29. Fill in the blank: [A] 6 [B] 28 [C] 108 [D] 10
___ is a factor of 54.
30. Choose the correct statement.
[A] 4 is a factor of 12. [B] 30 is a factor of 7.
[C] 7 is a factor of 30. [D] 12 is a factor of 4.
31. List all the factors of 72.
[A] 1, 36, 72 [B] 1, 2, 4, 17, 34, 68, 72
[C] 1, 2, 19, 38 [D] 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72
32. Which is *not* a factor of 72? [A] 144 [B] 18 [C] 24 [D] 36

Topic 1 - Whole Number Concepts Part 1

Obj. 11 - Prime factorization

33. Which factor tree is correct?



- [A] I [B] I & II [C] II [D] Neither

34. What are the prime factors of 84?

- [A] 2, 2, 3, 7 [B] 1, 84 [C] 2, 3, 7, 84 [D] 1, 3

35. Write the prime factorization of 105.

- [A] $3 \times 5 \times 7$ [B] $2 \times 3 \times 5 \times 7$
[C] $1 \times 3 \times 5 \times 7$ [D] $3 \times 5 \times 7 \times 7$

Obj. 12 - Greatest common factor

36. What is the greatest common factor of 32 and 40?

- [A] 40 [B] 5 [C] 8 [D] 2

37. What is the greatest common factor of 36 and 48?

- [A] 96 [B] 7 [C] 12 [D] 2

38. What is the greatest common factor of 120, 48 and 72?

- [A] 15 [B] 60 [C] 24 [D] 6

Obj. 13 - Multiples of whole numbers

39. What is the fourth multiple of 4? [A] 20 [B] 16 [C] 12 [D] 8

40. Which is *not* a multiple of 2? [A] 20 [B] 3 [C] 10 [D] 4

Topic 2 - Whole Number Concepts Part 2

Obj. 15 - Add whole numbers

1.
$$\begin{array}{r} 56,269 \\ 24,424 \\ 2,849 \\ + 741 \\ \hline \end{array}$$
 [A] 84,283 [B] 83,283 [C] 84,273 [D] 94,283

2.
$$\begin{array}{r} 8,921,390 \\ + 2,093,930 \\ \hline \end{array}$$

[A] 11,015,325 [B] 11,015,420 [C] 11,015,320 [D] 11,015,330

3. $179,060 + 348,855 =$

[A] 527,905 [B] 527,915 [C] 527,916 [D] 527,914

Obj. 16 - Properties of addition

4. Which of the following is an example of the commutative property of addition?

[A] $6 + 2 = 2 + 6$

[B] $2 + 2 = 4 + 0$

[C] $(7 + 7) + 2 = 7 + (7 + 2)$

[D] $2 + (6 + 7) = 2 + (6 + 7)$

5. What number would make the number sentence true?

$55 + (? + 14) = (55 + 39) + 14$

[A] 55

[B] 39

[C] 14

[D] none of these

6. What number would make the number sentence true? $40 + ? = 64 + 40$

[A] 66

[B] 64

[C] 74

[D] 104

Obj. 17 - Subtract whole numbers

7.
$$\begin{array}{r} 569,369 \\ - 63,521 \\ \hline \end{array}$$
 [A] 505,848 [B] 504,748 [C] 515,958 [D] 505,958

8. $3,000 - 1,171 =$ [A] 1,929 [B] 1,839 [C] 1,829 [D] 1,819

Topic 2 - Whole Number Concepts Part 2

9. $856 - 283 - 54 =$ [A] 519 [B] 619 [C] 627 [D] 529

Obj. 18 - Word Problems: Add and subtract whole numbers

10. In the United States 1,968 radio stations play country music, 869 play pop music, 1,066 are oldies stations, and 685 are rock stations. How many radio stations play country music, pop, oldies, or rock?

- [A] 4,568 radio stations [B] 4,788 radio stations
[C] 4,594 radio stations [D] 4,588 radio stations

11. The band club sold 1,554 candy bars the first week of the fundraiser to buy new band uniforms. 3,724 candy bars were sold the second week. How many candy bars were sold the first two weeks?

- [A] 5,368 candy bars [B] 5,276 candy bars
[C] 4,478 candy bars [D] 5,278 candy bars

12. Centerville is on Highway 35 between Eastville and Westville. It is 5 miles from Eastville to Centerville and 11 miles from Eastville to Westville. How far is it from Centerville to Westville?

- [A] 8 mi [B] 3 mi [C] 6 mi [D] 16 mi

13. Use any strategy to solve.

Arthur started school in 1969. He is still living. If he was 4 years old when he started school, how old was he in 1975?

- [A] 6 years old [B] 10 years old [C] 20 years old [D] 24 years old

Obj. 19 - Estimate whole number sums and differences, round

14. Estimate by rounding to the nearest hundred: $6,426$

$$\begin{array}{r} 6,426 \\ - 108 \\ \hline \end{array}$$

- [A] 5,900 [B] 6,400 [C] 6,200 [D] 6,300

Topic 2 - Whole Number Concepts Part 2

15. Estimate by rounding to the nearest thousand: $62,877$
 $\quad\quad\quad - 1,520$

[A] 58,000 [B] 62,000 [C] 60,000 [D] 61,000

16. Estimate by rounding each addend to the nearest hundred: $6,021 + 176$

[A] 6,300 [B] 7,200 [C] 6,200 [D] 7,300

Obj. 20 - Multiply by 2 or more digits

17. 128 [A] 26,486 [B] 26,496 [C] 26,396 [D] 25,396
 $\times 207$

18. Find the product of 744 and 806.

[A] 598,858 [B] 63,984 [C] 5,956,464 [D] 599,664

19. $4,116$ [A] 2,277,916 [B] 2,273,426 [C] 2,267,896 [D] 2,267,916
 $\times 551$

Obj. 21 - Word Problems: Multiply whole numbers

20. The population of a city in 1850 was 1,926. The population was 584 times greater by 1992. What was the population of the city in 1992?

[A] 1,125,484 people [B] 1,054,784 people
[C] 1,124,784 people [D] 1,124,754 people

21. The lifetime average for a professional bowler in the Women's International Bowling Congress was 213. If she bowled 5,256 games over her career, what was her total score as a professional bowler?

[A] 1,120,128 [B] 1,119,528 [C] 1,120,528 [D] 1,119,618

Topic 2 - Whole Number Concepts Part 2

22. The planet Mars completes one orbit of the sun in 687 Earth days. How many Earth days are there in 394 Mars years (orbits)?

- [A] 270,748 days [B] 270,878 days [C] 270,678 days [D] 278,678 days

Obj. 22 - Multiply by a multiple of 10

23. $5,808$ [A] 345,260 [B] 348,380 [C] 348,480 [D] 347,600
 $\times 60$

24. $40,810 \times 160 =$

- [A] 6,529,590 [B] 6,529,600 [C] 6,529,500 [D] 6,528,600

25. $276 \times 110 =$ [A] 30,460 [B] 303,600 [C] 30,360 [D] 30,350

Obj. 23 - Multiply by a power of 10

26. $59 \times 10 =$ [A] 49 [B] 69 [C] 5,900 [D] 590

27. $134 \times 10 =$ [A] 124 [B] 144 [C] 1,340 [D] 13,400

28. Multiply 22 by 100. [A] 220 [B] 1,022 [C] 22 [D] 2,200

Obj. 24 - Estimate products, round (3+ digits)

29. Estimate by rounding to the greatest place: 6×143

- [A] 70 [B] 6,000 [C] 600 [D] 700

30. Estimate by rounding each term to the greatest place: $4,133 \times 487$

- [A] 2,000,000 [B] 2,040,000 [C] 2,100,000 [D] 2,410,000

31. Estimate by rounding to the greatest place: 620×78

- [A] 36,000 [B] 35,000 [C] 48,000 [D] 42,000

Topic 2 - Whole Number Concepts Part 2

Obj. 25 - Word Problems: Estimate products, round (2+ digits)

32. Derenda has 65 bags of marshmallows with 77 marshmallows in each bag. If you round to the greatest place to find the total number of marshmallows, which is the best estimate?
- [A] 4,800 marshmallows [B] 6,400 marshmallows
[C] 6,300 marshmallows [D] 5,600 marshmallows
33. A disc jockey worked at a certain radio station for 2,100 days. During each daily shift, she played 25 songs. By rounding to the greatest place, estimate the total number of songs she played at the station.
- [A] 600,000 songs [B] 60,000 songs [C] 600 songs [D] 62,100 songs
34. For the following situation, estimate by rounding to the greatest place:
If each of the 4,412 members in a community drank 926 glasses of water in a year, about how many glasses of water would be consumed by that community in a year?
- [A] 4,500,000 glasses of water [B] 4,040,000 glasses of water
[C] 3,600,000 glasses of water [D] 3,690,000 glasses of water

Obj. 26 - Evaluate exponents

35. How is the product $8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8$ expressed in exponential notation?
- [A] 7^8 [B] 8^2 [C] 8×7 [D] 8^7
36. $5^3 =$ [A] 15 [B] 625 [C] 125 [D] 53
37. $2^3 =$ [A] 16 [B] 8 [C] 23 [D] 6
38. $7^4 =$ [A] 2,401 [B] 343 [C] 2,411 [D] 28

Obj. 27 - Multiply with exponents

39. $3 \times 7^2 =$ [A] 441 [B] 196 [C] 147 [D] 42
40. $4^2 \times 2^2 =$ [A] 32 [B] 16 [C] 64 [D] 20

Topic 2 - Whole Number Concepts Part 2

41. $2^3 \times 5 \times 3^0 =$ [A] 120 [B] 240 [C] 0 [D] 40

42. $5 \times 3^3 =$ [A] 135 [B] 3,375 [C] 46 [D] 162

Obj. 28 - Divide whole numbers (2+ digit divisor)

43. $15,128 \div 62 =$ [A] 234 [B] 144 [C] 244 [D] 245

44. $726 \overline{)174,240}$ [A] 240 [B] 140 [C] 241 [D] 230

45. $584 \overline{)40,324}$ [A] 68 R 39 [B] 69 R 28 [C] 86 R 70 [D] 70 R 17

Obj. 29 - Word Problems: Divide whole numbers

46. During one morning shift, the Choco-Ball factory baked and boxed 156,832 Mini-Choco-Balls. Each box contained 116 Mini-Choco-Balls. How many boxes were filled?

[A] 1,358 boxes [B] 1,352 boxes [C] 1,351 boxes [D] 1,346 boxes

47. There are 122 school buses that serve Evergreen School District. The buses travel a total of 6,466 miles in one week of school. How many miles does each bus drive on average?

[A] 70 mi [B] 6,588 mi [C] 6,344 mi [D] 53 mi

48. There were 4,102 students who signed up to go to a student government convention. The convention president had to assign 586 students to each hotel. How many different hotels were needed?

[A] 9 hotels [B] 5 hotels [C] 7 hotels [D] 90 hotels

49. Divyendu and Parties Too was open 71 days last year. In that time, they sold 18,389 balloons. What was the average number of balloons sold per day?

[A] 259 balloons [B] 249 balloons [C] 159 balloons [D] 260 balloons

Topic 2 - Whole Number Concepts Part 2

58. Which number is divisible by 3 and by 8?

- [A] 3,272 [B] 1,227 [C] 1,221 [D] 408

Obj. 33 - Order of operations

59. Simplify: $7 \times 4 + 9 - 12 \div 4$ [A] 27.25 [B] 27 [C] 6.25 [D] 34

60. Simplify: $25 \div 5 \times 5 + 6 - 2$ [A] 29 [B] 9 [C] 5 [D] 4

61. Simplify: $7 - 18 \times 2 \div 9 + 4$ [A] 10 [B] 6 [C] 7 [D] 9

Obj. 34 - Simplify with grouping symbols

62. Simplify: $2 \times (8 + 4) + 3$ [A] 72 [B] 27 [C] 30 [D] 23

63. Simplify: $(7 \times 9) - 2 \times 4 + 7$ [A] 251 [B] 62 [C] 48 [D] 41

64. Simplify: $2 \times (2 + 4) - 5$ [A] 7 [B] 3 [C] 2 [D] 5

Obj. 35 - Word Problems: Not enough information

65. August has 5 fewer CDs than Carina. What more do you need to know to find out how many CDs August has?

- [A] the number of Carina's CDs [B] how much Carina's CDs cost
[C] the titles of August's CDs [D] the number of songs in all the CDs

66. Hercules worked 20 hours more than Mary Ellen during the month of July. What more do you need to know to find how many hours Hercules worked in July?

- [A] the number of hours Mary Ellen worked in July
[B] the number of hours Hercules worked in August
[C] the number of hours Mary Ellen worked in August
[D] the number of hours Hercules worked in June

Topic 2 - Whole Number Concepts Part 2

67. Jane went to the carpet store to purchase carpet for her living room. The price of the carpet she chose was \$10 per square yard. Her living room is 12 feet wide. What does she need to know to calculate the cost?
- [A] the height of the ceiling [B] the length of the room
[C] the balance in her checkbook [D] the number of inches in a yard

Obj. 36 - Word Problems: Too much information

68. Mrs. Acuna drove to a friend's house. She drove 14 miles down Highway 10 and then 8 miles down Highway 40. How many miles was it to her friend's house?
- [A] 48 miles [B] 24 miles [C] 22 miles [D] 50 miles
69. Matt has 14 marbles in a row and 12 beads in a row. If there are 3 rows of marbles, how many marbles does Matt have?
- [A] 26 marbles [B] 56 marbles [C] 36 marbles [D] 42 marbles
70. Shawn is purchasing prizes for the races at the class picnic. He wants to have a first, second, and third-place prize for each category. The prizes must cost less than \$11 each. What information below is *not* needed to find out how much Shawn will spend?
- [A] the cost of each prize [B] the number of categories
[C] who will be at the picnic
[D] there will be a first, second, and third place prize
71. Katie spent 3 hours working on a typing project for the print shop. Her boss agreed to pay her \$6 for each of the first 11 pages and \$2 for each of the remaining pages. Katie typed 18 pages. What information below is *not* needed to calculate the amount Katie will be paid?
- [A] \$6 per the first 11 pages [B] 3 hours
[C] \$2 for each remaining page [D] 18 pages

Obj. 37 - Word Problems: 2-step with whole numbers

72. Rosa has a bookcase with 8 shelves. There are 9 books on each of the top 5 shelves and 7 books on each of the lower 3 shelves. How many books are in the bookcase?
- [A] 55 books [B] 72 books [C] 24 books [D] 66 books

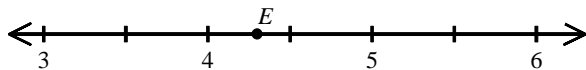
Topic 2 - Whole Number Concepts Part 2

73. Barry bought 5 books at \$11 each, 4 tapes at \$6 each, and 2 posters at \$5 each. What was the total cost of this merchandise?
- [A] \$79 [B] \$100 [C] \$33 [D] \$89
74. A field is 170 meters by 200 meters. A barn with floor dimensions of 29 meters by 46 meters is built in the field. How much area is left over?
- [A] 33,925 m² [B] 32,679 m² [C] 35,334 m² [D] 32,666 m²
75. Donald wants to buy a car when he is sixteen. He has saved \$584 for this purpose. He can afford to pay \$23 a week. His grandparents will sell him their car for \$1,757. In how many weeks will he fully pay for the car?
- [A] 63 weeks [B] 51 weeks [C] 46 weeks [D] 39 weeks

Topic 3 - Decimals: Introduction

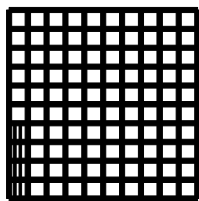
Obj. 38 - Model decimals (to hundredths)

1. Point E best represents what number?



- [A] 4.3 [B] 5.8 [C] 4.8 [D] 3.3

2. Which decimal tells how much is *shaded*?



- [A] 0.4 [B] 0.004 [C] 4 [D] 0.04

Obj. 39 - Place value in decimals (to ten thousandths)

3. What is the place of the 2 in 34.26?

- [A] tenths [B] hundredths [C] tens [D] hundreds

4. What is the place of the 2 in 210.3865?

- [A] tens [B] hundreds [C] hundredths [D] ones

5. Which digit is in the thousandths place? 4,790.825

- [A] 2 [B] 4 [C] 5 [D] 7

6. Which digit is in the tenths place in 7,486.0521?

- [A] 2 [B] 8 [C] 6 [D] 0

7. Which digit is in the tenths place in 314.69? [A] 1 [B] 9 [C] 6 [D] 3

Obj. 40 - Decimal standard form to word name

8. Write 5.645 in words.
[A] five and six hundred forty-five thousandths
[B] four and seven hundred fifty-five thousandths
[C] fifty-six and fifty-five hundredths [D] fifty-six and forty-five hundredths
9. Write 232.61 in words.
[A] two hundred and thirty-two and sixty-one tenths
[B] two hundred thirty-two and sixty-one thousandths
[C] two hundred thirty-two and sixty-one hundredths
[D] two hundred and thirty-two and sixty-one hundred
10. Write 0.6025 in words.
[A] six thousand twenty-five hundred thousandths
[B] six thousand and twenty-five ten-thousandths
[C] six thousand twenty-five ten-thousandths
[D] six thousand and twenty-five hundred thousandths

Obj. 41 - Word name to decimal standard form

11. Write as a decimal in standard notation:
forty-two and eighty-seven hundredths
[A] 4,287,000 [B] 42.87 [C] 0.4287 [D] 42.087
12. Write as a decimal in standard notation:
fifty-six and ninety-three ten thousandths
[A] 56.0093 [B] 56.093 [C] 5,693,000 [D] 0.5693
13. Write two thousand one hundred three and sixty-five thousandths in standard notation.
[A] 2,103.065 [B] 20,103.065 [C] 2,103.0065 [D] 2,013.065

Topic 3 - Decimals: Introduction

Obj. 42 - Decimal standard form to expanded notation

14. Write 12.56 in expanded notation.

[A] $10 + 2 + 0.5 + 0.06$

[B] $12 + 0 + 0.5 + 0.006$

[C] $10 + 2 + 0.5$

[D] $12 + 0.56$

15. Write 83.502 in expanded notation.

[A] $83 + 0.502$

[B] $80 + 3 + 0.5 + 0.02$

[C] $80 + 3 + 0.502$

[D] none of these

16. Write 14.273 in expanded notation.

[A] $14 + 0.2 + 0.07 + 0.003$

[B] $10 + 4 + 0.2 + 0.07 + 0.003$

[C] $14 + 0.273$

[D] $10 + 4 + 0.27 + 0.003$

17. Write 79.614 in expanded notation.

[A] $70 + 9 + 0.6 + 0.04$

[B] $79 + 0.614$

[C] $70 + 9 + 0.614$

[D] $70 + 9 + 0.6 + 0.01 + 0.004$

Obj. 43 - Order decimals

18. Which of the following are ordered from *least to greatest*?

[A] 6, 2.8, 1.1, 0.6

[B] 0.6, 1.1, 2.8, 6

[C] 0.6, 2.8, 1.1, 6

[D] 1.1, 0.6, 2.8, 6

19. Order the following from *least to greatest*:

0.096, 0.084, 0.017, 0.056

[A] 0.017, 0.056, 0.084, 0.096

[B] 0.096, 0.084, 0.017, 0.056

[C] 0.056, 0.017, 0.084, 0.096

[D] 0.096, 0.084, 0.056, 0.017

20. Arrange these decimal numbers from *least to greatest*: 0.429, 0.467, 0.13, 0.08.

[A] 0.08, 0.467, 0.429, 0.13

[B] 0.13, 0.467, 0.429, 0.08

[C] 0.13, 0.429, 0.08, 0.467

[D] 0.08, 0.13, 0.429, 0.467

21. Arrange in order from *greatest to least* using the $>$ sign:

1.004 1.043 1.04

[A] $1.004 > 1.043 > 1.04$

[B] $1.004 > 1.04 > 1.043$

[C] $1.043 > 1.04 > 1.004$

[D] $1.043 > 1.004 > 1.04$

Obj. 44 - Compare decimals

22. Which of the following numbers is greater than 2.23?

[A] 2.221

[B] 0.323

[C] 2.133

[D] none of these

23. Which number is greater than 5.26?

[A] 0.314

[B] 4.384

[C] 5.284

[D] 5.254

24. Which of the following statements is true?

[A] 36.3 is greater than 36.05

[B] 7.0429 is greater than 7.057

[C] 5.57 is greater than 5.6

[D] 0.003 is greater than 0.3

25. Which of the following is *not* a true statement?

[A] $26.70009 < 26.71$

[B] $3.7100 > 3.71$

[C] $2.5320 > 2.5319$

[D] $26.21 = 26.2100000$

Obj. 45 - Round decimals

26. Round 76.1 to the nearest whole number.

[A] 77

[B] 76

[C] 80

[D] 75

27. Round 10.29 to the nearest tenth.

[A] 10

[B] 10.3

[C] 10.2

[D] 10.4

Topic 3 - Decimals: Introduction

28. Which numbers below round to 14 when rounded to the nearest whole number?

14.26 13.34 14.74 14.97
14.33 13.95 13.1 13.63

[A] 14.26, 13.63, 14.33, 13.95

[B] 14.26, 14.33, 14.74, 14.97

[C] 13.1, 13.34, 14.74, 13.63

[D] 13.95, 14.74, 13.1, 14.97

29. Round 42.269 to the nearest tenth.

[A] 42.2

[B] 42.3

[C] 42.4

[D] 269

30. Replace with a digit which would *not* allow you to round 86.26 to 86.26.

[A] 1

[B] 4

[C] 9

[D] 3

Obj. 46 - Add money expressions

1. \$6.50 [A] \$8.90 [B] \$4.10 [C] \$8.75 [D] \$7.90
 \$2.00
 + \$0.40

2. \$2.98 + \$9.24 + \$7.53 =
 [A] \$19.75 [B] \$19.65 [C] \$19.66 [D] \$1,975

3. \$32.23 [A] \$36.21 [B] \$32.21 [C] \$42.25 [D] \$36.65
 + 4.42

4. \$95.61 + \$2.89 = [A] \$103.30 [B] \$98.50 [C] \$93.28 [D] \$97.28

Obj. 47 - Word Problems: Add money expressions

5. On a field trip Chris spent \$2.40 for bus fare, \$7.35 for lunch and \$6.60 for a museum entrance fee. How much money did Chris spend?
 [A] \$9.00 [B] \$16.35 [C] \$16.85 [D] \$9.75

6. From a mail-order catalog, Jack ordered a wallet for \$19.36, a sweater for \$25.46, and a watch for \$81.74. He added \$13.82 for tax, shipping, and handling. What was the total cost of Jack's order?
 [A] \$139.38 [B] \$140.38 [C] \$116.56 [D] \$126.56

7. You bought a pen for \$0.97 and a folder for \$0.69. How much money did you spend?
 [A] \$0.67 [B] \$1.56 [C] \$1.55 [D] \$1.66

Obj. 48 - Add decimals

8. 7.6 [A] 18.8 [B] 17.2 [C] 18.3 [D] 18.2
 6.3
 + 4.4

Topic 4 - Decimals: Add and Subtract

9. $4.73 + 9.52 + 8.14 =$ [A] 2,239 [B] 0.002239 [C] 22.39 [D] 7.46

10. $772.236 + 2.937 =$

[A] 775.173 [B] 777.297 [C] 776.173 [D] 783.606

11.
$$\begin{array}{r} 5.76 \\ + 9.1 \\ \hline \end{array}$$
 [A] 14.86 [B] 14.96 [C] 15.76 [D] 15.86

12.
$$\begin{array}{r} 3.75 \\ 9.17 \\ + 9.6 \\ \hline \end{array}$$
 [A] 22.52 [B] 18.77 [C] 13.35 [D] 12.92

13.
$$\begin{array}{r} 11 \\ 12.67 \\ + 18.8 \\ \hline \end{array}$$
 [A] 42.47 [B] 41.75 [C] 42.7 [D] 42.58

14. $46.854 + 3.69 =$ [A] 50.544 [B] 47.223 [C] 54.054 [D] 472.23

Obj. 49 - Word Problems: Add decimals

15. Write the total value in dollars and cents:
2 dimes, 2 pennies

[A] \$0.12 [B] \$0.22 [C] \$0.47 [D] \$0.27

16. Tim added 7.326 grams of a chemical to 7.719 grams of water. What is the total weight to the nearest hundredth of a gram?

[A] 1.39 g [B] 14.05 g [C] 15.05 g [D] 0.39 g

17. Tara has 3 packages to mail. The weights of the packages are 2.60 pounds, 1.28 pounds, and 2.04 pounds. What is the total weight of Tara's packages?

[A] 5.92 lb [B] 3.88 lb [C] 4.64 lb [D] 3.32 lb

Topic 4 - Decimals: Add and Subtract

18. In a three-person medley relay race, the 100 meters was run in 10.28 seconds, the 200 meters in 20.38 seconds, and the 400 meters in 44.97 seconds. What was the total time for the race?
- [A] 76.63 sec [B] 25.21 sec [C] 75.73 sec [D] 75.63 sec
19. One of the events at the circus was Zachary the Human Cannonball. On Saturday he did four shows. His distances measured 8.54 meters, 11.15 meters, 14.63 meters, and 19.68 meters. What was the total distance Zachary flew that day?
- [A] 54.00 meters [B] 45.46 meters [C] 49.32 meters [D] 42.85 meters
20. Ruth has four strings. One is 24.48 centimeters long, one is 50.21 centimeters long, one is 61.03 centimeters long and one is 36.08 centimeters long. How many centimeters of string does she have in all?
- [A] 135.72 cm [B] 171.8 cm [C] 134.72 cm [D] 180.76 cm
21. The Holman family rides bicycles together. One day they rode 3.6 km and the next day they rode 7.5 km. How many total kilometers did they ride on these two days?
- [A] 11 km [B] 21 km [C] 20.9 km [D] 11.1 km

Obj. 50 - Subtract money expressions

22. \$6.50 [A] \$4.59 [B] \$5.44 [C] \$7.41 [D] \$5.59
 – \$0.91
23. \$95.13 [A] \$93.54 [B] \$94.53 [C] \$94.54 [D] \$84.54
 – \$0.59
24. \$6.00 [A] \$5.72 [B] \$5.62 [C] \$6.28 [D] \$4.72
 – \$0.28

Topic 4 - Decimals: Add and Subtract

Obj. 51 - Word Problems: Subtract money expressions

25. It costs \$8.66 to buy a helium balloon, a stuffed toy, and a candy bar separately. It costs \$7.88 to get the same items in a birthday pack. How much do you save by buying the birthday pack?
- [A] \$1.88 [B] \$0.78 [C] \$16.54 [D] \$0.68
26. Mai had \$85.77 in her checking account. She wrote a check for \$17.29. How much money did she have left in the account?
- [A] \$68.48 [B] \$67.48 [C] \$103.06 [D] \$104.06
27. At Stereo Wonder World, Stereo A costs \$595.49 and Stereo B costs \$1,202.66. How much more is Stereo B?
- [A] \$607.17 [B] \$1,858.15 [C] \$614.17 [D] \$1,798.15
28. You are buying a folder for \$0.59. You give the clerk \$5.00. How much change should you receive?
- [A] \$3.42 [B] \$4.51 [C] \$4.52 [D] \$4.41
29. Suppose your savings account has a balance of \$50.25. You deposit \$50.78 and withdraw \$25.04. What is the new balance?
- [A] \$25.57 [B] \$75.99 [C] \$126.07 [D] \$24.51

Obj. 52 - Subtract decimals

30.
$$\begin{array}{r} 6.64 \\ - 5.2 \\ \hline \end{array}$$
 [A] 1.44 [B] 0.34 [C] 1.4 [D] 11.44
31. $29.75 - 4.7 =$ [A] 34.45 [B] 20.35 [C] 9.4 [D] 25.05
32. $247.82 - 18.5 =$ [A] 62.82 [B] 266.32 [C] 2,459.7 [D] 229.32
33. $7.62 - 1.792 =$ [A] 6.828 [B] 5.27 [C] 5.828 [D] 4.828
34. $6.79 - 1.87 =$ [A] 5.92 [B] 4.92 [C] 5.02 [D] none of these

Topic 4 - Decimals: Add and Subtract

35.
$$\begin{array}{r} 22.251 \\ - 0.199 \\ \hline \end{array}$$
 [A] 22.162 [B] 21.952 [C] 22.052 [D] 22.062

Obj. 53 - Word Problems: Subtract decimals

36. The weight of a chemical sample and its container is 66.15 grams. If the container has a weight of 29.622 grams, what is the weight of the sample?

- [A] 36.428 g [B] 36.518 g [C] 36.538 g [D] 36.528 g

37. In Olympia, Washington it rained 5.2 inches in November and 6.1 inches in December. Which month had the most rainfall? How much more?

- [A] November; 13.4 inches [B] November; 11.3 inches
[C] December; 1.2 inches [D] December; 0.9 inches

38. Ling talked to her grandparents on the phone for 4.8 minutes. If she talked to her grandmother for 2.1 minutes, how long did Ling talk to her grandfather?

- [A] 6.9 minutes [B] 2.9 minutes [C] 2.7 minutes [D] 2.5 minutes

39. Meg has 9 milligrams of copper and 0.71 milligrams of nickel. How much more copper does she have than nickel?

- [A] 9.71 milligrams [B] 82.9 milligrams
[C] 8.19 milligrams [D] 8.29 milligrams

40. Nancy was fishing with her uncle. If she caught a 29.9-centimeter fish and her uncle caught a 34.5-centimeter fish, how much longer was her uncle's fish?

- [A] 4.5 cm [B] 64.4 cm [C] 4.6 cm [D] 64.5 cm

41. Steve had a board that was 37.5 centimeters long. If he cut off 9.83 centimeters of it, how much board did Steve have left?

- [A] 20.39 cm [B] 27.67 cm [C] 47.33 cm [D] 54.61 cm

Obj. 54 - Round decimal sums and differences to nearest whole number

42. Estimate by rounding to the nearest whole number: $8.7 + 12.1 + 0.02$

- [A] 20 [B] 21 [C] 20.9 [D] 23.0

Topic 4 - Decimals: Add and Subtract

43. Estimate by rounding to the nearest whole number: $\$15.11 + \14.66
[A] \$28 [B] \$30 [C] \$24 [D] \$34
44. Estimate by rounding each decimal to the nearest whole number: $12.12 + 13.77$
[A] 25 [B] 26.1 [C] 26 [D] 23
45. Estimate by rounding to the nearest whole number: $3.02 - 1.07$
[A] 4 [B] 1 [C] 3 [D] 2
46. Estimate by rounding each term to the nearest whole number:
$$\begin{array}{r} 37.86 \\ - 15.22 \\ \hline \end{array}$$

[A] 20 [B] 23 [C] 24 [D] 21
47. Estimate by rounding to the nearest whole number:
$$\begin{array}{r} 21.22 \\ - 7.24 \\ \hline \end{array}$$

[A] 12 [B] 15 [C] 13 [D] 14

Obj. 55 - Word Problems: Round decimal sums and differences to nearest whole number

48. The heights of three building blocks are 9.8 cm, 10.3 cm, and 0.3 cm. Estimate the height of the three blocks stacked on top of each other by rounding to the nearest whole number.
[A] 20 cm [B] 21 cm [C] 23 cm [D] 19.9 cm
49. Marie wants to buy a shirt for \$18.28 and a pair of sunglasses for \$15.77. Estimate how much money Marie will need by rounding to the nearest dollar.
[A] \$28 [B] \$34 [C] \$32 [D] \$38
50. It took Sonia 8.66 minutes to walk home from school. It took Pazi 5.86 minutes to ride her bike home from school. Estimate how much longer it took Sonia to get home than Pazi by rounding to the nearest whole number.
[A] 15 minutes [B] 4 minutes [C] 2 minutes [D] 3 minutes

Topic 4 - Decimals: Add and Subtract

58. Estimate using front-end digits with adjustment: 36.99

$$\begin{array}{r} 36.99 \\ + 32.41 \\ \hline \end{array}$$

- [A] 60 [B] 50 [C] 70 [D] 80

59. Estimate by using front-end estimation with adjustment: \$5.91

$$\begin{array}{r} \$5.91 \\ + \$6.84 \\ \hline \end{array}$$

- [A] \$12.00 [B] \$13.00 [C] \$11.00 [D] \$10.00

Obj. 59 - Word Problems: Front-end estimate decimal sums with adjustment

60. You are helping a friend to understand front-end estimation with adjustment. You line up two ants measuring 0.299 cm and 0.589 cm end to end. Which estimate for the total length of the two ants would you help your friend to choose?

- [A] 0.7 cm [B] 0.9 cm [C] 0.8 cm [D] 0.6 cm

61. Which is the best estimate, using front-end estimation with adjustment, of the combined length of two whales measuring 13.39 ft and 11.91 ft?

- [A] 25 ft [B] 35 ft [C] 30 ft [D] 10 ft

62. Cosmo the Copy Cat sent a copy job to the printers, and it cost \$6.31. The job had a mistake, so Cosmo had it done again. This time the cost was \$5.64. Cosmo needed to tell his boss the approximate cost of the two jobs, so he used front-end estimation with adjustment. What cost did Cosmo tell his boss?

- [A] \$11.00 [B] \$10.00 [C] \$12.00 [D] \$13.00

Topic 5 - Decimals: Multiply and Divide

Obj. 60 - Multiply money expressions by whole numbers

1. $\$34.71 \times 10 =$ [A] $\$247.10$ [B] $\$347.10$ [C] $\$336.10$ [D] $\$236.10$

2. $\$65.13$ [A] $\$375.65$ [B] $\$325.65$ [C] $\$326.15$ [D] $\$330.65$
 $\times \quad 5$

3. $\$64.69 \times 45 =$
[A] $\$2,911.05$ [B] $\$3,557.95$ [C] $\$3,361.05$ [D] $\$2,915.55$

4. $\$19.65$ [A] $\$256.75$ [B] $\$255.45$ [C] $\$451.95$ [D] $\$385.45$
 $\times \quad 13$

Obj. 61 - Word Problems: Multiply money expressions

5. A track team with 64 members decided to buy T-shirts that cost \$7.35 each. What was the cost of the 64 T-shirts?

[A] $\$81.35$ [B] $\$71.35$ [C] $\$480.40$ [D] $\$470.40$

6. Danetta is having a birthday party at a pizza place. The cost per person for food is \$4.94. How much will the food cost if there are 9 people at Danetta's party?

[A] $\$49.40$ [B] $\$0.55$ [C] $\$44.46$ [D] $\$43.47$

7. Sirloin steak costs \$2.16 a pound at the market. If Betty bought 6 pounds, what was the cost?

[A] $\$12.96$ [B] $\$13.00$ [C] $\$0.36$ [D] $\$8.16$

Obj. 62 - Multiply decimals by whole numbers (2-3 digits)

8. $43.73 \times 21 =$ [A] 481.03 [B] 708.33 [C] 918.33 [D] 916.23

9. $31.54 \times 17 =$ [A] 366.18 [B] 536.18 [C] 220.78 [D] 534.48

10. $\begin{array}{r} 178 \\ \times 0.019 \\ \hline \end{array}$ [A] 3.382 [B] 33.82 [C] 0.3382 [D] 338.2

Topic 5 - Decimals: Multiply and Divide

Obj. 63 - Multiply decimals (to thousandths)

11.
$$\begin{array}{r} 0.15 \\ \times 0.8 \\ \hline \end{array}$$
 [A] 1.2 [B] 0.16 [C] 0.12 [D] none of these
12. $0.5 \times 0.38 =$ [A] 0.019 [B] 1.9 [C] 0.19 [D] 19
13. $0.005 \times 9.9 =$ [A] 0.495 [B] 4.95 [C] 0.0495 [D] 0.00495
14. $5.55 \times 0.018 =$ [A] 0.0999 [B] 0.00999 [C] 99.9 [D] 9.99
15.
$$\begin{array}{r} 8.007 \\ \times 0.075 \\ \hline \end{array}$$
 [A] 56.4493 [B] 6.0525 [C] 0.600525 [D] 6.00525
16. $59.4 \times 0.013 =$ [A] 0.07722 [B] 0.7722 [C] 7.722 [D] 772.2
17. $0.558 \times 0.15 =$ [A] 83.7 [B] 8.37 [C] 0.0837 [D] 0.00837

Obj. 64 - Word Problems: Multiply decimals

18. Shelly's newspaper route is 5.79 miles long. How many miles does she travel in 32 days?
[A] 185.18 miles [B] 37.79 miles [C] 185.28 miles [D] 179.49 miles
19. Each serving of potato chips has 9.36 grams of fat. If a bag contains 4.5 servings, how many grams of fat are in one bag of potato chips?
[A] 42.02 grams [B] 14.86 grams [C] 42.12 grams [D] 13.86 grams
20. Theo feeds animals at a zoo. During the first part of May, the animals in his care ate 27.23 kilograms of food. For the entire month of May, they ate 2.6 times that amount. How much food did they eat during May?
[A] 70.798 kg [B] 32.43 kg [C] 68.198 kg [D] 29.83 kg
21. Renee reports that on her last trip abroad, the British Pound (£) was worth \$2.32. She bought souvenirs which cost £175. How much did they cost in US dollars?
[A] \$40.60 [B] \$4.06 [C] \$4,060.00 [D] \$406.00

Topic 5 - Decimals: Multiply and Divide

Obj. 65 - Multiply decimals by a power of 10

22. Multiply: 100×0.39 [A] 390 [B] 3.9 [C] 0.39 [D] 39
23. $0.212 \times 100 =$ [A] 212.0 [B] 21.2 [C] 0.212 [D] 2.12
24. $0.42 \times 100,000 =$
[A] 0.042 [B] 4,200,000 [C] 0.0000042 [D] 42,000

Obj. 66 - Word Problems: Multiply decimals by a power of 10

25. The ball bearings weighed 49.8 grams each. How much would 100 of them weigh?
[A] 4,980 grams [B] 498 grams [C] 498,000 grams [D] 49,800 grams
26. A dog eats 9.399 pounds of dog food a week. How many pounds would 10,000 dogs eat in a week?
[A] 0.0009399 pounds [B] 939,900 pounds
[C] 9,399 pounds [D] 93,990 pounds
27. One ball bearing has a weight of 7.748 grams. What is the weight of 10,000 ball bearings?
[A] 77,480 g [B] 7,748 g [C] 77.48 g [D] 7,748,000 g

Obj. 67 - Divide money expressions by 2-digit whole numbers

28. $25 \overline{) \$42650}$ [A] \$27.03 [B] \$17.06 [C] \$16.12 [D] \$18.08
29. $\$214.20 \div 18 =$ [A] \$10.90 [B] \$11.90 [C] \$109 [D] \$1.19
30. $36 \overline{) \$33.12}$ [A] \$0.92 [B] \$0.83 [C] \$1.01 [D] \$1.02
31. $\$18.24 \div 32 =$ [A] \$0.62 [B] \$0.57 [C] \$0.67 [D] \$0.52

Topic 5 - Decimals: Multiply and Divide

Obj. 68 - Word Problems: Divide money expressions

32. Allen bought 3 pieces of candy at a specialty candy shop and then later bought 2 more. The total cost was \$3.75. How much did the shop charge per piece of candy?
[A] \$0.85 [B] \$6.75 [C] \$0.75 [D] \$5.75
33. A grocery store is having a sale on produce. The price for 8 artichokes is \$4.00. Each artichoke costs the same. How much is one artichoke?
[A] \$12.00 [B] \$0.40 [C] \$0.50 [D] \$32.00
34. Paul borrowed \$2,254.50 to buy a car. He is going to pay back the loan with 9 equal payments. How much will each payment be?
[A] \$243.50 [B] \$259.50 [C] \$241.50 [D] \$250.50
35. A box of 5 Hi-Bounce balls costs \$6.25. What is the cost per ball?
[A] \$6.25 [B] \$1.50 [C] \$6.75 [D] \$1.25
36. Carl bought a 27-pound turkey for \$26. To the nearest cent, what did the turkey cost per pound?
[A] \$1.07 [B] \$0.83 [C] \$1.00 [D] \$0.96

Obj. 69 - Divide decimals by 1- and 2-digit whole numbers

37. $2\overline{)0.8}$ [A] 4 [B] 0.4 [C] 0.2 [D] 0.04
38. $6.37 \div 7 =$ [A] 9.01 [B] 0.901 [C] 0.91 [D] 9.1
39. $4\overline{)0.1}$ [A] 0.25 [B] 2.5 [C] 0.025 [D] 0.0025
40. $142.5 \div 15 =$ [A] 9.5 [B] 0.95 [C] 8.5 [D] 85

Topic 5 - Decimals: Multiply and Divide

Obj. 73 - Word Problems: Divide decimals by powers of 10

50. Identical balls in a bin have a total mass of 68.91 grams. If there are 1,000 balls in the bin, what is the mass of each?
[A] 0.6891 g [B] 0.06891 g [C] 6,891 g [D] 1,068.91 g
51. The car company spent \$5,300 for 1,000 hubcaps. How much did each hubcap cost?
[A] \$0.053 [B] \$0.53 [C] \$53 [D] \$5.30
52. A bag of 100 seeds weighs 8.95 ounces. What is the average weight of one seed?
[A] 108.95 oz [B] 89.5 oz [C] 0.000895 oz [D] 0.0895 oz

Obj. 74 - Divide whole numbers by decimals

53. $3,672 \div 0.9 =$ [A] 408 [B] 408,000 [C] 40,800 [D] 4,080
54. $0.33 \overline{)198}$ [A] 6,000 [B] 600 [C] 60 [D] 0.06
55. Divide: $\frac{207}{0.23}$ [A] 900 [B] 90 [C] 9 [D] 0.09

Obj. 75 - Word Problems: Divide whole numbers by decimals

56. There are 459 ounces of fruit punch. If each drinking glass holds 44.2 ounces, how many full glasses will there be?
[A] 113 glasses [B] 11 glasses [C] 103 glasses [D] 10 glasses
57. Franz has a full 50-ounce jar of applesauce. How many 3.4-ounce servings of applesauce will Franz get out of the jar? Round your answer to the nearest hundredth.
[A] 14.71 servings [B] 1.41 servings
[C] 11.13 servings [D] 11.71 servings

Topic 5 - Decimals: Multiply and Divide

58. A clothing manufacturer had 5,063 meters of fabric to make identical dresses, all of the same size. If each dress used 6.1 meters of fabric, how many dresses could be made?

- [A] 10,599 dresses [B] 830 dresses [C] 30,884 dresses [D] 83 dresses

Obj. 76 - Divide decimals by decimals

59. $0.07 \overline{)4.9}$ [A] 70 [B] 0.007 [C] 0.7 [D] none of these

60. $3.04 \div 0.008 =$ [A] 3.08 [B] 0.308 [C] 38 [D] 380

61. $0.5 \overline{)4.05}$ [A] 12.1 [B] 8.1 [C] 0.801 [D] 0.81

Obj. 77 - Word Problems: Divide decimals by decimals

62. A block of jack cheese weighs 53.4 ounces. How many slices that weigh 1.1 ounces can be cut from the block?

- [A] 48 slices [B] 49 slices [C] 485 slices [D] 495 slices

63. Eli's car took 6.24 gallons of gas to go 67.77 miles. How many miles per gallon does Eli's car get? Round your answer to the nearest hundredth.

- [A] 8.93 m/g [B] 10.86 m/g [C] 7.68 m/g [D] 6.43 m/g

64. Each story of a building is 10.6 meters tall. If the height of the building is 169.6 meters, how many floors does the building have?

- [A] 13 floors [B] 12 floors [C] 16 floors [D] 20 floors

65. Eve sells roses for \$7.99 a bunch. At the end of the day she had collected \$87.89. How many bunches of roses did she sell?

- [A] 10 bunches [B] 14 bunches [C] 11 bunches [D] 13 bunches

Obj. 78 - Estimate decimal products, round

66. Estimate by rounding to the greatest place: 1.93×0.49

- [A] 10 [B] 0.1 [C] 1 [D] 0.01

Topic 5 - Decimals: Multiply and Divide

67. Estimate by rounding to the greatest place: 8.04×6.9
[A] 56 [B] 5,600 [C] 560 [D] 5.6
68. Estimate by rounding to the tens place: 78.49×37.41
[A] 3,600 [B] 3,200 [C] 360 [D] 320

Obj. 79 - Word Problems: Estimate decimal products, round

69. There were 2.21 liters of Solution B available in the science lab. Eileen used 0.37 of that amount. By rounding to the greatest place, estimate how many liters of Solution B she used.
[A] 0.08 liter [B] 0.8 liter [C] 80 liters [D] 8 liters
70. Kevin's personal computer has 18.81 megabytes of available memory. The server at Kevin's school has 79.77 times as much available memory. Estimate the number of megabytes of memory available on the school server by rounding to the greatest place.
[A] 1,600 megabytes [B] 240 megabytes
[C] 160 megabytes [D] 2,400 megabytes

Obj. 80 - Estimate decimal quotients, compatible numbers

71. Estimate by using compatible numbers: $1,529.7 \div 49.73$
[A] 300 [B] 3 [C] 3,000 [D] 30
72. Estimate by using compatible numbers: $29.7 \div 3.95$
[A] 24 [B] 8 [C] 70 [D] 7
73. Estimate the quotient using compatible numbers: $2.01 \div 5$
[A] 0.4 [B] 0.401 [C] 4.01 [D] 4

Obj. 81 - Word Problems: Estimate decimal quotients, compatible numbers

74. About how many 5.99-kilogram lead weights can be formed using 49.6 kilograms of lead? Estimate by using compatible numbers.
[A] 9 weights [B] 8 weights [C] 80 weights [D] 42 weights

Topic 5 - Decimals: Multiply and Divide

75. A frame shop cut pieces of picture framing material to precisely 3.97 inches long. How many of these pieces could be cut from a 29.2-inch piece of framing material? Estimate by using compatible numbers.

[A] 7 pieces [B] 24 pieces [C] 60 pieces [D] 70 pieces

Obj. 82 - Order of operations with decimals

76. Simplify: $5.3 \times 19.2 + 3.6 \div 6$

[A] 52.68 [B] 20.14 [C] 102.36 [D] 107.76

77. Simplify: $34.4 - 1.9 \cdot 0.31$

[A] 33.711 [B] 33.811 [C] 10.075 [D] 10.106

78. Simplify: $57.5 - 3.2 \times 0.78$

[A] 55.004 [B] 42.432 [C] 54.904 [D] 42.354

Obj. 83 - Word Problems: 2-step with decimals

79. Rachel needs 20 “AAA” batteries for a science project she is working on. The batteries come in packs of 4 and cost \$3.50 for each pack. How much will it cost her to buy the batteries?

[A] \$17.50 [B] \$16.50 [C] \$14.00 [D] \$70.00

80. A charter bus holding 70 passengers costs \$107.50 an hour. If the round trip took 7 hours, what did it cost each passenger?

[A] \$107.50 [B] \$752.50 [C] \$10.75 [D] \$21.50

Topic 5 - Decimals: Multiply and Divide

81. Listed below are the prices of the Uwashem Laundromat.

| | |
|---------------|--------|
| Wash per load | \$0.90 |
| Dry per load | \$1.35 |
| Soap | \$0.90 |
| Bleach | \$0.80 |

Gertrude washes and dries 6 loads and buys 5 boxes of soap and a box of bleach. How much does Gertrude spend?

- [A] \$13.40 [B] \$18.80 [C] \$10.70 [D] \$18.00

82. Mr. Sullivan cut 29 pieces of wire for his students' class project. Each piece of wire was 5.66 meters long. Mr. Sullivan had 3.8 meters of wire left when he was finished. How long was the original piece of wire?

- [A] 38.46 m [B] 164.14 m [C] 165.94 m [D] 167.94 m

83. Diesel fuel costs \$1.26 a gallon. A trucker averages 8 miles to a gallon of fuel. How much will gasoline cost for a trip of 480 miles?

- [A] \$75.60 [B] \$60.00 [C] \$604.80 [D] \$10.08

Obj. 84 - Model fractions of wholes

1. What fraction of the figure below is *shaded*?



[A] $\frac{5}{9}$

[B] $\frac{1}{9}$

[C] $\frac{4}{9}$

[D] $\frac{4}{5}$

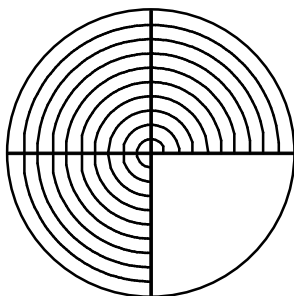
2. What fraction of the circle is *shaded*?

[A] $\frac{3}{4}$

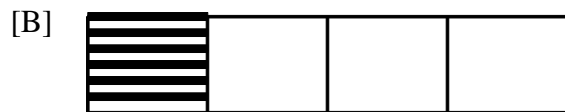
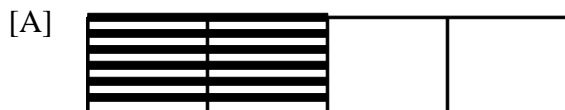
[B] 2

[C] 1

[D] $\frac{4}{3}$



3. Which model below shows $\frac{1}{4}$ shaded?



Topic 6 - Introduction to Fractions

Obj. 85 - Model fractions of sets

4. What fraction of the circles are white? [A] $\frac{2}{3}$ [B] $\frac{2}{5}$ [C] $\frac{3}{5}$ [D] $\frac{3}{2}$



5. What fraction of the circles are black? [A] $\frac{4}{3}$ [B] $\frac{4}{7}$ [C] $\frac{3}{4}$ [D] $\frac{3}{7}$

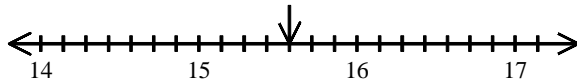


6. What group of circles is a model for the unreduced fraction $\frac{8}{12}$?



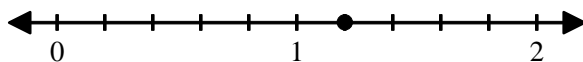
Obj. 86 - Model fractions and mixed numbers on number lines

7. Name the fraction or the mixed number marked by the arrow.



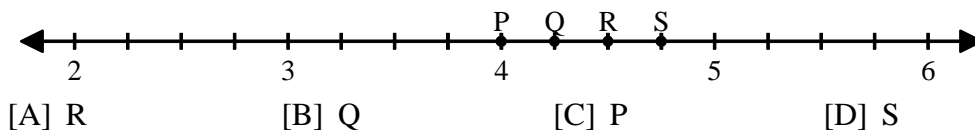
- [A] $14\frac{4}{7}$ [B] $15\frac{4}{7}$ [C] $15\frac{5}{7}$ [D] $15\frac{3}{7}$

8. The point on the graph shows which fraction?



- [A] $1\frac{1}{5}$ [B] $2\frac{1}{5}$ [C] 1 [D] $1\frac{1}{6}$

9. Which letter represents the number $4\frac{1}{4}$ on the number line?



Obj. 87 - Simplify fractions

10. Reduce $\frac{12}{18}$ to lowest terms. [A] $\frac{4}{6}$ [B] $\frac{2}{3}$ [C] $\frac{2}{9}$ [D] $\frac{6}{9}$
11. Write $\frac{40}{48}$ in simplest form. [A] 40 [B] $\frac{5}{6}$ [C] 8 [D] $\frac{6}{5}$
12. Write the reduced form of $\frac{12}{21}$. [A] $\frac{28}{11}$ [B] $\frac{120}{210}$ [C] $\frac{4}{7}$ [D] $\frac{13}{20}$

Obj. 88 - Equivalent fractions

13. Which of the following fractions is equivalent to $\frac{2}{3}$?
- [A] $\frac{18}{6}$
[B] $\frac{3}{2}$
[C] $\frac{4}{27}$
[D] $\frac{4}{6}$
14. Find a fraction equivalent to $\frac{8}{10}$ with a denominator of 5.
- [A] $\frac{5}{5}$
[B] $\frac{3}{5}$
[C] $\frac{6}{5}$
[D] $\frac{4}{5}$
15. Which of the following fractions is equivalent to $\frac{1}{6}$?
- [A] $\frac{5}{18}$
[B] $\frac{3}{30}$
[C] $\frac{6}{1}$
[D] $\frac{5}{30}$

Topic 6 - Introduction to Fractions

16. Find a fraction equivalent to $\frac{3}{4}$ with a denominator of 8.

- [A] $\frac{12}{8}$ [B] $\frac{9}{8}$ [C] $\frac{3}{8}$ [D] $\frac{6}{8}$

17. Which of the following fractions is equivalent to $\frac{13}{9}$?

- [A] $\frac{104}{63}$ [B] $\frac{39}{27}$ [C] $\frac{78}{45}$ [D] $\frac{18}{91}$

18. Find the missing term to make the fractions equivalent. $\frac{10}{14} = \frac{5}{?}$

- [A] 6 [B] 8 [C] 5 [D] 7

Obj. 89 - Proper and improper fractions

19. How many of these fractions are improper? $\frac{2}{3}, \frac{2}{6}, \frac{1}{4}, \frac{14}{7}$

- [A] 4 [B] 2 [C] 1 [D] 3

20. Which of the following is an improper fraction?

- [A] $\frac{3}{13}$ [B] $\frac{3}{14}$ [C] $\frac{4}{13}$ [D] $\frac{13}{3}$

Obj. 90 - Mixed numbers to improper fractions

21. Write $8\frac{3}{10}$ as an improper fraction.

- [A] $\frac{80}{10}$ [B] $\frac{77}{10}$ [C] $\frac{83}{10}$ [D] $\frac{91}{10}$

22. The diagram below illustrates the mixed number $2\frac{1}{3}$. What fraction does it

represent?



- [A] $\frac{6}{3}$ [B] $\frac{7}{3}$ [C] $\frac{3}{3}$ [D] $\frac{2}{3}$
23. Choose the fraction that is equivalent to $3\frac{2}{3}$.
- [A] $\frac{18}{3}$ [B] $\frac{3}{11}$ [C] $\frac{11}{3}$ [D] $\frac{3}{18}$

Obj. 91 - Improper fractions to mixed numbers

24. Write $\frac{19}{6}$ as a mixed number.
- [A] $1\frac{6}{13}$ [B] $19\frac{1}{6}$ [C] $3\frac{1}{6}$ [D] $\frac{1}{6}$
25. Convert $\frac{15}{4}$ to a whole number or a mixed number.
- [A] $1\frac{4}{11}$ [B] $15\frac{1}{4}$ [C] $3\frac{3}{4}$ [D] $\frac{3}{4}$
26. Write $\frac{29}{8}$ as a mixed number. [A] $1\frac{3}{8}$ [B] $3\frac{8}{5}$ [C] $1\frac{2}{8}$ [D] $3\frac{5}{8}$

Obj. 92 - Order fractions

27. If $\frac{11}{4}$, $\frac{9}{2}$, $\frac{21}{4}$, and $\frac{20}{6}$ are placed in order from least to greatest, which will be first?
- [A] $\frac{21}{4}$ [B] $\frac{11}{4}$ [C] $\frac{9}{2}$ [D] $\frac{20}{6}$

Topic 6 - Introduction to Fractions

28. Find a number between $\frac{3}{10}$ and $\frac{4}{5}$.

[A] $\frac{17}{20}$

[B] $\frac{1}{4}$

[C] $\frac{1}{5}$

[D] $\frac{9}{20}$

29. Order these fractions from *least* to *greatest*: $\frac{6}{13}, \frac{13}{13}, \frac{12}{13}, \frac{3}{13}$

[A] $\frac{3}{13}, \frac{6}{13}, \frac{12}{13}, \frac{13}{13}$

[B] $\frac{13}{13}, \frac{3}{13}, \frac{6}{13}, \frac{12}{13}$

[C] $\frac{12}{13}, \frac{13}{13}, \frac{3}{13}, \frac{6}{13}$

[D] $\frac{6}{13}, \frac{12}{13}, \frac{13}{13}, \frac{3}{13}$

30. Order these fractions from least to greatest: $\frac{1}{2}, \frac{3}{10}, \frac{7}{8}$

[A] $\frac{3}{10}, \frac{1}{2}, \frac{7}{8}$

[B] $\frac{1}{2}, \frac{7}{8}, \frac{3}{10}$

[C] $\frac{3}{10}, \frac{7}{8}, \frac{1}{2}$

[D] $\frac{7}{8}, \frac{3}{10}, \frac{1}{2}$

Obj. 93 - Compare fractions

31. Which of the following is true?

[A] $\frac{4}{5} < \frac{2}{3}$

[B] $\frac{2}{5} > \frac{4}{7}$

[C] $\frac{2}{3} > \frac{4}{5}$

[D] $\frac{2}{5} < \frac{4}{7}$

32. Compare: $\frac{3}{6}$ $\frac{1}{2}$

[A] $\frac{3}{6} = \frac{1}{2}$

[B] $\frac{3}{6} > \frac{1}{2}$

[C] $\frac{3}{6} < \frac{1}{2}$

[D] $\frac{1}{2} < \frac{3}{6}$

33. Compare $\frac{1}{2}$ and $\frac{3}{4}$.

[A] $\frac{1}{2} < \frac{3}{4}$

[B] $\frac{1}{2} > \frac{3}{4}$

[C] $\frac{1}{2} = \frac{3}{4}$

[D] $\frac{1}{2} \geq \frac{3}{4}$

34. Which of the following fractions is the least?

$$\frac{1}{15}, \frac{1}{2}, \frac{3}{5}, \frac{2}{3}$$

[A] $\frac{3}{5}$

[B] $\frac{1}{15}$

[C] $\frac{1}{2}$

[D] $\frac{2}{3}$

Obj. 94 - Find reciprocals

35. Find the reciprocal of $\frac{5}{2}$.

[A] $\frac{2}{5}$

[B] 52

[C] 25

[D] $\frac{2}{5}$

36. Find the reciprocal of $1\frac{1}{4}$.

[A] 45

[B] 54

[C] $\frac{4}{5}$

[D] $\frac{3}{4}$

37. $\frac{7}{8} \times \square = 1$

[A] $\frac{8}{7}$

[B] 0

[C] 1

[D] $\frac{7}{8}$

Topic 7 - Fractions: Add and Subtract

Obj. 95 - Add like fractions

1. $\frac{1}{10} + \frac{4}{10} =$ (Reduce your answer)

[A] $\frac{9}{20}$

[B] $\frac{1}{2}$

[C] 2

[D] $\frac{9}{10}$

2. $\frac{1}{17} + \frac{10}{17} =$ [A] $\frac{17}{10}$ [B] $\frac{11}{289}$ [C] $\frac{11}{17}$ [D] $\frac{11}{34}$

3. $\frac{13}{16} + \frac{5}{16} =$ (Reduce your answer)

[A] $1\frac{1}{4}$

[B] $\frac{18}{32}$

[C] $1\frac{1}{8}$

[D] $1\frac{3}{16}$

4. $\frac{2}{10} + \frac{2}{10} + \frac{8}{10} + \frac{2}{10} =$ (Reduce your answer)

[A] $1\frac{2}{5}$

[B] $\frac{7}{20}$

[C] $\frac{2}{5}$

[D] $1\frac{3}{10}$

Obj. 96 - Add like fractions and mixed numbers

5. $7\frac{1}{4} + 5\frac{2}{4} =$ (Reduce your answer)

[A] $11\frac{3}{4}$

[B] 12

[C] $12\frac{3}{4}$

[D] 13

6. $8\frac{3}{7} + 3\frac{2}{7} =$ (Reduce your answer)

[A] $6\frac{1}{7}$

[B] $5\frac{1}{14}$

[C] $\frac{1}{7}$

[D] $11\frac{5}{7}$

7. $\frac{5}{8} + 2\frac{1}{8} + 1\frac{1}{8} =$ (Reduce your answer)

- [A] $3\frac{3}{4}$ [B] $3\frac{7}{8}$ [C] $3\frac{5}{8}$ [D] 4

8. $5\frac{3}{17} + 4\frac{16}{17} =$ (Reduce your answer)

- [A] $11\frac{2}{17}$ [B] $10\frac{3}{17}$ [C] $11\frac{3}{17}$ [D] $10\frac{2}{17}$

Obj. 97 - Least common denominator

9. Rename $\frac{5}{6}$, $\frac{4}{9}$ and $\frac{5}{7}$ so that they have the least common denominator.

- [A] $\frac{105}{126}$, $\frac{56}{126}$, $\frac{90}{126}$ [B] $\frac{21}{126}$, $\frac{14}{126}$, $\frac{18}{126}$

- [C] $\frac{5}{9}$, $\frac{4}{9}$, $\frac{5}{9}$ [D] $\frac{6}{22}$, $\frac{9}{22}$, $\frac{7}{22}$

10. What is the LCD of $\frac{11}{120}$, $\frac{53}{90}$, and $\frac{47}{60}$?

- [A] 30 [B] 1440 [C] 72 [D] 360

11. Find the LCD: $\frac{3}{7}$, $\frac{8}{35}$, $\frac{1}{10}$ [A] 70 [B] 350 [C] 140 [D] 35

Obj. 98 - Add unlike fractions

12. $\frac{6}{9} + \frac{1}{8} =$ (Reduce your answer)

- [A] $\frac{1}{9}$ [B] $\frac{24}{19}$ [C] $\frac{7}{17}$ [D] none of these

Topic 7 - Fractions: Add and Subtract

13. $\frac{5}{8} + \frac{1}{20} =$ (Reduce your answer)

[A] $\frac{23}{40}$

[B] $\frac{27}{40}$

[C] $\frac{5}{28}$

[D] none of these

14. $\frac{4}{6} + \frac{1}{5} =$ (Reduce your answer)

[A] $\frac{13}{15}$

[B] $\frac{1}{6}$

[C] $1\frac{2}{13}$

[D] $\frac{5}{11}$

Obj. 99 - Add unlike mixed numbers

15. $6\frac{5}{9} + 5\frac{3}{5} =$ (Reduce your answer)

[A] $11\frac{22}{45}$

[B] $12\frac{7}{45}$

[C] $11\frac{4}{7}$

[D] none of these

16. $1\frac{7}{8} + 2\frac{1}{5} =$ (Reduce your answer)

[A] $3\frac{1}{2}$

[B] $4\frac{3}{40}$

[C] $13\frac{1}{18}$

[D] 4

17. $19\frac{7}{8} + 15\frac{9}{10} + 11\frac{3}{4} =$ (Reduce your answer)

[A] $10\frac{19}{160}$

[B] $45\frac{3}{4}$

[C] $47\frac{21}{40}$

[D] $279\frac{3}{4}$

18. $1\frac{2}{3} + 7\frac{3}{8} =$ (Reduce your answer)

[A] $8\frac{5}{11}$

[B] $8\frac{1}{24}$

[C] $7\frac{1}{4}$

[D] $9\frac{1}{24}$

19. $6\frac{1}{5} + 13\frac{3}{7} =$ (Reduce your answer)

[A] $19\frac{22}{35}$

[B] $19\frac{1}{3}$

[C] $9\frac{1}{3}$

[D] $7\frac{1}{7}$

Obj. 100 - Word Problems: Add fractions and mixed numbers

20. Maggie glued two boards together for strength. One board was $\frac{15}{32}$ of an inch thick and the other was $\frac{3}{32}$ of an inch thick. If the glue adds no thickness, how thick is the new glued board?

[A] 32 in.

[B] $\frac{9}{16}$ in.

[C] $\frac{16}{9}$ in.

[D] $\frac{45}{32}$ in.

21. Mary has $\frac{1}{3}$ cup of flour and $\frac{1}{3}$ cup of sugar. How many cups does she have all together?

[A] $\frac{2}{3}$ cup

[B] $\frac{1}{3}$ cup

[C] 1 cup

[D] 3 cups

22. Nina mowed $\frac{1}{9}$ of the lawn. Later, Bonnie mowed $\frac{4}{7}$ of the lawn. How much of the lawn did they mow all together?

[A] $\frac{5}{16}$ of the lawn

[B] $\frac{63}{43}$ of the lawn

[C] $\frac{4}{63}$ of the lawn

[D] $\frac{43}{63}$ of the lawn

23. Max has $\frac{3}{4}$ of a bottle of juice, Terry has $\frac{1}{2}$ of a bottle of juice, and Allen has $\frac{5}{8}$ of a bottle of juice. How much juice do they have all together?

[A] $1\frac{7}{8}$ bottles

[B] $\frac{9}{14}$ bottle

[C] $\frac{4}{7}$ bottle

[D] 2 bottles

Topic 7 - Fractions: Add and Subtract

24. The school band was performing 3 pieces. The lengths of the pieces played were $4\frac{1}{3}$ minutes, $6\frac{1}{3}$ minutes, and $2\frac{1}{4}$ minutes. The total time taken between pieces was $3\frac{1}{4}$ minutes. How long was the performance?
- [A] 12 min [B] $16\frac{1}{6}$ min [C] $16\frac{11}{12}$ min [D] $24\frac{1}{4}$ min
25. Juan used $1\frac{1}{3}$ cups of brown sugar, $4\frac{3}{4}$ cups of sugar, $2\frac{5}{6}$ cups of water, and $4\frac{1}{2}$ cups of flour in his recipe. How many cups of ingredients did he use?
- [A] $13\frac{1}{2}$ cups [B] $12\frac{11}{12}$ cups [C] 11 cups [D] $13\frac{5}{12}$ cups
26. Burt's grandmother is making two recipes for Thanksgiving. The first needs $\frac{2}{5}$ of a cup of flour, and the second $\frac{5}{7}$ of a cup of flour. How much flour will Burt's grandmother need to make the recipes?
- [A] $1\frac{4}{35}$ cups [B] $\frac{7}{50}$ cup [C] $2\frac{4}{35}$ cups [D] $\frac{7}{12}$ cup

Obj. 101 - Estimate fraction sums, round

27. Estimate by rounding to the nearest whole number: $3\frac{5}{7} + 5\frac{1}{5}$
- [A] 9 [B] 4 [C] 10 [D] 8
28. Estimate by rounding to the nearest whole number: $6\frac{1}{5} + \frac{1}{3}$
- [A] 7 [B] 5 [C] 6 [D] 3
29. Estimate by rounding to the nearest half: $\frac{1}{2} + \frac{1}{4}$
- [A] 2 [B] 1 [C] $1\frac{1}{2}$ [D] 3

Obj. 102 - Word Problems: Estimate fraction sums, round

30. I had $9\frac{4}{7}$ grapefruits and my sister gave me $4\frac{1}{4}$ more grapefruits. I want to estimate how many grapefruits I have by rounding to the nearest whole number. Which would be the best estimate?
- [A] 15 grapefruits [B] 10 grapefruits
[C] 13 grapefruits [D] 14 grapefruits
31. A caterer is counting pizzas to determine whether more are needed to finish serving the high school dance guests. If one table has $3\frac{3}{5}$ pizzas and the other table has $\frac{3}{5}$ pizzas, estimate how many pizzas they have left by rounding to the nearest whole number.
- [A] 6 pizzas [B] 5 pizzas [C] 2 pizzas [D] 4 pizzas
32. Brad had $\frac{4}{5}$ of a bowl of grapes and got $\frac{10}{14}$ of a bowl more. Estimate how many bowls of grapes he had by rounding to the nearest half.
- [A] 3 bowls [B] $1\frac{1}{2}$ bowls [C] 4 bowls [D] 2 bowls

Obj. 103 - Subtract like fractions

33. $\frac{5}{7} - \frac{3}{7} =$ (Reduce your answer) [A] $\frac{3}{7}$ [B] $1\frac{1}{7}$ [C] $\frac{2}{7}$ [D] 2
34. $\frac{13}{12} - \frac{3}{12} =$ (Reduce your answer)
- [A] $\frac{3}{8}$ [B] $\frac{5}{12}$ [C] 1 [D] $\frac{5}{6}$

Topic 7 - Fractions: Add and Subtract

35. $\frac{11}{17} - \frac{9}{17} =$ (Reduce your answer)

[A] 2

[B] $\frac{3}{17}$

[C] $\frac{2}{17}$

[D] $1\frac{3}{17}$

36. $\frac{16}{9} - \frac{8}{9} =$ (Reduce your answer) [A] $\frac{8}{3}$ [B] 8 [C] $\frac{8}{9}$ [D] NG

Obj. 104 - Subtract like mixed numbers

37. $6\frac{4}{11} - 3\frac{2}{11} =$ (Reduce your answer)

[A] $3\frac{2}{11}$

[B] $4\frac{2}{11}$

[C] $3\frac{1}{11}$

[D] $\frac{2}{11}$

38. $7\frac{2}{3}$ (Reduce your answer)

$$\begin{array}{r} - 3\frac{1}{3} \\ \hline \end{array}$$

[A] $2\frac{2}{3}$

[B] $5\frac{1}{3}$

[C] $4\frac{1}{3}$

[D] $3\frac{1}{3}$

39. $7\frac{4}{9} - 2\frac{2}{9} =$ (Reduce your answer)

[A] $9\frac{2}{3}$

[B] $1\frac{1}{2}$

[C] 47

[D] $5\frac{2}{9}$

Obj. 105 - Subtract unlike fractions

40. $\frac{6}{7} - \frac{1}{4} =$ (Reduce your answer)

[A] $\frac{31}{28}$

[B] $\frac{5}{28}$

[C] $\frac{17}{28}$

[D] none of these

41. $\frac{3}{4} - \frac{1}{2} =$ (Reduce your answer)

- [A] $\frac{1}{4}$ [B] $\frac{1}{3}$ [C] $\frac{2}{3}$ [D] 1

42. $\frac{3}{8}$ (Reduce your answer) [A] $\frac{18}{72}$ [B] $\frac{1}{36}$ [C] $\frac{19}{72}$ [D] $\frac{17}{72}$
 $-\frac{1}{9}$

43. $\frac{14}{15} - \frac{7}{18} =$ (Reduce your answer)

- [A] $\frac{7}{13}$ [B] $\frac{49}{90}$ [C] $\frac{149}{270}$ [D] $\frac{74}{135}$

44. $\frac{13}{15}$ (Reduce your answer) [A] 4 [B] 1 [C] $\frac{62}{75}$ [D] $\frac{4}{15}$
 $-\frac{3}{5}$

45. $\frac{6}{7} - \frac{1}{10} =$ (Reduce your answer)

- [A] $\frac{3}{35}$ [B] $\frac{53}{70}$ [C] $\frac{1}{14}$ [D] $\frac{67}{70}$

Obj. 106 - Subtract unlike mixed numbers, no regroup

46. $7\frac{5}{9}$ (Reduce your answer)
 $-\ 6\frac{2}{7}$

- [A] $1\frac{53}{63}$ [B] $1\frac{17}{63}$ [C] $13\frac{17}{63}$ [D] $\frac{10}{63}$

Topic 7 - Fractions: Add and Subtract

47. $8\frac{3}{8} - 2\frac{1}{5} =$ (Reduce your answer)

[A] $6\frac{2}{3}$

[B] $6\frac{7}{40}$

[C] $\frac{21}{40}$

[D] none of these

48. $7\frac{1}{7} - 6\frac{1}{8} =$ (Reduce your answer)

[A] 6

[B] $1\frac{1}{56}$

[C] $\frac{1}{3}$

[D] $2\frac{1}{56}$

Obj. 107 - Subtract mixed numbers from whole numbers

49. $9 - 3\frac{4}{5} =$ (Reduce your answer)

[A] $8\frac{1}{5}$

[B] $6\frac{4}{5}$

[C] $5\frac{1}{5}$

[D] $12\frac{4}{5}$

50. 37 (Reduce your answer)

$$\begin{array}{r} - 16\frac{1}{5} \\ \hline \end{array}$$

[A] $21\frac{4}{5}$

[B] $20\frac{4}{5}$

[C] $21\frac{1}{5}$

[D] $20\frac{1}{5}$

51. $8 - 5\frac{2}{3} =$ (Reduce your answer)

[A] $3\frac{2}{3}$

[B] $2\frac{1}{3}$

[C] $13\frac{2}{3}$

[D] $7\frac{1}{3}$

Obj. 108 - Subtract mixed numbers, regroup

52. $4\frac{2}{5}$ [A] $2\frac{3}{5}$ [B] $1\frac{2}{5}$ [C] $2\frac{1}{5}$ [D] $1\frac{3}{5}$

$$\begin{array}{r} - 2\frac{4}{5} \\ \hline \end{array}$$

Topic 7 - Fractions: Add and Subtract

53. $9\frac{5}{9}$ [A] $4\frac{7}{9}$ [B] $3\frac{2}{9}$ [C] $4\frac{2}{9}$ [D] $3\frac{7}{9}$

$$\begin{array}{r} 9\frac{5}{9} \\ -5\frac{7}{9} \\ \hline \end{array}$$

54. $11\frac{4}{11} - 3\frac{5}{11} =$ [A] $5\frac{1}{2}$ [B] $7\frac{10}{11}$ [C] $14\frac{9}{11}$ [D] $1\frac{2}{9}$

55. $4\frac{3}{4} - 2\frac{4}{5} =$ (Reduce your answer)

[A] $2\frac{7}{20}$ [B] $1\frac{1}{4}$ [C] $1\frac{19}{20}$ [D] $2\frac{1}{20}$

56. $9\frac{1}{4} - 1\frac{5}{6} =$ (Reduce your answer)

[A] $7\frac{5}{12}$ [B] $\frac{3}{65}$ [C] $8\frac{5}{12}$ [D] 8

Obj. 109 - Word Problems: Subtract fractions

57. Peter drank $\frac{1}{8}$ of a quart of milk. Steve drank $\frac{7}{9}$ of a quart. How much more did Steve drink than Peter?

[A] $\frac{47}{72}$ qt [B] 6 qt [C] $\frac{1}{12}$ qt [D] $\frac{65}{72}$ qt

58. The width of a doormat is $\frac{2}{3}$ yard. The doorway is $\frac{7}{8}$ yard wide. Find the difference in widths.

[A] $1\frac{13}{24}$ yards [B] $1\frac{1}{4}$ yards [C] $\frac{5}{24}$ yard [D] $\frac{7}{24}$ yard

Topic 7 - Fractions: Add and Subtract

59. After fishing for 3 hours, Neil caught a fish that was $15\frac{1}{2}$ inches long, and Maria caught one that was $13\frac{7}{8}$ inches long. How much longer was Neil's fish than Maria's fish?

[A] $\frac{5}{8}$ in. [B] $2\frac{1}{8}$ in. [C] $1\frac{3}{4}$ in. [D] none of these

60. Irma has $7\frac{6}{7}$ yards of material. Her new skirt will take $4\frac{2}{3}$ yards. How much material will she have left after the skirt is made?

[A] $3\frac{4}{21}$ yd [B] $7\frac{8}{21}$ yd [C] $12\frac{11}{21}$ yd [D] $4\frac{13}{21}$ yd

Obj. 110 - Estimate fraction differences, round

61. Estimate by rounding to the nearest whole number: $13\frac{3}{5} - \frac{1}{4}$

[A] 13 [B] 12 [C] 14 [D] 15

62. Estimate by rounding to the nearest whole number: $13\frac{2}{3} - 4\frac{4}{9}$

[A] 8 [B] 15 [C] 10 [D] 13

Obj. 111 - Word Problems: Estimate fraction differences, round

63. If you cut off $4\frac{3}{5}$ pounds of meat from a $13\frac{1}{7}$ -pound slab, about how much do you have left? Estimate by rounding to the nearest pound.

[A] 8 lbs [B] 10 lbs [C] 15 lbs [D] 9 lbs

64. Jonah started out with a submarine sandwich $12\frac{4}{5}$ in. long. He ate $2\frac{3}{4}$ in. Estimate the amount of sandwich remaining by rounding to the nearest inch.

[A] 9 in. [B] 13 in. [C] 14 in. [D] 10 in.

65. Usa and Ken took a day trip, starting from their hotel. They were $13\frac{1}{4}$ miles due north of the hotel when they realized they were lost. They went back to a small town they had passed $3\frac{2}{5}$ miles earlier for directions. Estimate the distance from the hotel to the small town by rounding each term to the nearest whole number.
- [A] 15 miles [B] 10 miles [C] 14 miles [D] 9 miles

Topic 8 - Fractions: Multiply, Divide, and Combined Operations

Obj. 112 - Multiply fractions

1. $\frac{35}{11} \times \frac{2}{5} =$ (Reduce your answer)

[A] $1\frac{3}{11}$

[B] $\frac{10}{11}$

[C] $\frac{22}{35}$

[D] $\frac{37}{55}$

2. $\frac{1}{3} \times \frac{4}{5} =$ (Reduce your answer)

[A] $\frac{5}{12}$

[B] $\frac{8}{13}$

[C] $\frac{4}{15}$

[D] $\frac{80}{3}$

3. $\frac{5}{8} \times \frac{5}{6} =$ (Reduce your answer)

[A] $\frac{5}{24}$

[B] $\frac{25}{48}$

[C] $\frac{4}{3}$

[D] none of these

4. $\frac{4}{5} \times \frac{2}{3} =$ (Reduce your answer)

[A] $\frac{1}{3}$

[B] $\frac{5}{6}$

[C] $\frac{16}{13}$

[D] none of these

5. $\frac{4}{7} \times \frac{3}{7} =$ (Reduce your answer)

[A] $\frac{12}{49}$

[B] $\frac{1}{7}$

[C] $\frac{12}{7}$

[D] none of these

Obj. 113 - Multiply fractions by whole numbers

6. $6 \times \frac{1}{4} =$ (Reduce your answer)

[A] 3

[B] $1\frac{1}{2}$

[C] $6\frac{1}{4}$

[D] 2

Topic 8 - Fractions: Multiply, Divide, and Combined Operations

7. $\frac{8}{99} \times 9 =$ (Reduce your answer)

- [A] $\frac{8}{11}$ [B] $\frac{8}{99}$ [C] $\frac{4}{81}$ [D] $\frac{11}{8}$

8. $\frac{3}{80}$ of 16 is _____. (Reduce your answer)

- [A] $\frac{3}{10}$ [B] $\frac{3}{5}$ [C] $\frac{3}{4}$ [D] $\frac{12}{5}$

9. $5 \times \frac{1}{11} =$ (Reduce your answer)

- [A] $\frac{55}{5}$ [B] $\frac{5}{11}$ [C] $\frac{5}{55}$ [D] $\frac{1}{55}$

10. $5 \times \frac{4}{35} \times \frac{7}{20} =$ (Reduce your answer)

- [A] $\frac{4}{25}$ [B] 1 [C] $\frac{1}{25}$ [D] $\frac{1}{5}$

Obj. 114 - Word Problems: Multiply fractions

11. There are 28 people on your swim team. Three fourths of the team went to a swim meet in July. How many people went to the swim meet in July?

- [A] 14 [B] 7 [C] 42 [D] 21

12. Walter had $\frac{5}{9}$ yard of ribbon. He used $\frac{1}{2}$ of it. How much ribbon did he use?

- [A] $\frac{8}{54}$ yard [B] $1\frac{1}{18}$ yards [C] $\frac{5}{18}$ yard [D] 54 yards

Topic 8 - Fractions: Multiply, Divide, and Combined Operations

13. You drank $\frac{1}{4}$ of $\frac{1}{9}$ of a cup of cocoa. How much cocoa did you drink?

- [A] $\frac{2}{13}$ cup [B] $\frac{1}{18}$ cup [C] $\frac{1}{13}$ cup [D] $\frac{1}{36}$ cup

Obj. 115 - Multiply mixed numbers by fractions

14. $\frac{2}{3} \times 6\frac{1}{5} =$ (Reduce your answer)

- [A] $4\frac{2}{15}$ [B] $4\frac{1}{23}$ [C] $4\frac{7}{45}$ [D] $6\frac{13}{15}$

15. $5\frac{3}{4} \times \frac{5}{7} =$ (Reduce your answer)

- [A] $4\frac{3}{28}$ [B] $3\frac{1}{28}$ [C] $\frac{5}{7}$ [D] $4\frac{1}{4}$

16. $\frac{7}{9} \times 7\frac{1}{5} =$ (Reduce your answer)

- [A] $\frac{7}{45}$ [B] $5\frac{3}{5}$ [C] 9 [D] $\frac{1}{9}$

Obj. 116 - Multiply mixed numbers

17. $4\frac{2}{5} \times 5\frac{1}{2} =$ (Reduce your answer)

- [A] 22 [B] $20\frac{1}{5}$ [C] $24\frac{1}{5}$ [D] $26\frac{2}{5}$

18. $4\frac{3}{8} \times 3\frac{7}{9} =$ (Reduce your answer)

- [A] $16\frac{19}{36}$ [B] $9\frac{1}{3}$ [C] $4\frac{1}{17}$ [D] 6

Topic 8 - Fractions: Multiply, Divide, and Combined Operations

19. $4\frac{1}{4} \times 1\frac{1}{2} =$ (Reduce your answer)

- [A] $6\frac{3}{8}$ [B] $\frac{1}{2}$ [C] $3\frac{1}{3}$ [D] 2

Obj. 117 - Word Problems: Multiply mixed numbers

20. Elsa had $7\frac{1}{4}$ sacks of cement and used $\frac{5}{7}$ of it. How much cement did Elsa use?

- [A] 28 sacks [B] $4\frac{5}{7}$ sacks [C] $5\frac{5}{28}$ sacks [D] $1\frac{1}{4}$ sacks

21. Fred had $5\frac{3}{4}$ liters of paint and used $\frac{2}{7}$ of it. How much paint did Fred use?

- [A] 2 L [B] $\frac{5}{14}$ L [C] $1\frac{9}{14}$ L [D] $9\frac{1}{3}$ L

22. At a warehouse, boxes of merchandise are placed on shelves in stacks that are 12 boxes high. If each box is $19\frac{1}{8}$ inches in height, how tall is the stack of boxes?

- [A] $227\frac{1}{8}$ in. [B] $228\frac{1}{8}$ in. [C] 230 in. [D] $229\frac{1}{2}$ in.

Obj. 118 - Divide fractions

23. $\frac{2}{21} \div \frac{1}{7} =$ (Reduce your answer)

- [A] $1\frac{1}{2}$ [B] $\frac{2}{3}$ [C] $\frac{1}{14}$ [D] $\frac{2}{147}$

24. $\frac{2}{3} \div \frac{12}{7} =$ (Reduce your answer)

- [A] $\frac{7}{12}$ [B] $2\frac{8}{21}$ [C] $\frac{7}{18}$ [D] $1\frac{1}{7}$

Topic 8 - Fractions: Multiply, Divide, and Combined Operations

25. $\frac{2}{7} \div \frac{14}{3} =$ (Reduce your answer)

- [A] $\frac{14}{3}$ [B] $\frac{3}{14}$ [C] $\frac{3}{49}$ [D] $\frac{4}{3}$

Obj. 119 - Divide mixed numbers by fractions

26. $4\frac{3}{4} \div \frac{3}{8} =$ (Reduce your answer)

- [A] $10\frac{2}{3}$ [B] $12\frac{2}{3}$ [C] $1\frac{25}{32}$ [D] 6

27. $8\frac{1}{2} \div \frac{4}{3} =$ (Reduce your answer)

- [A] $11\frac{1}{3}$ [B] $6\frac{3}{4}$ [C] $8\frac{3}{8}$ [D] $6\frac{3}{8}$

28. $9\frac{7}{8} \div \frac{1}{8} =$ (Reduce your answer)

- [A] 79 [B] 16 [C] $1\frac{15}{64}$ [D] $9\frac{7}{64}$

Obj. 120 - Divide mixed numbers

29. $4\frac{1}{5} \div 1\frac{2}{7} =$ (Reduce your answer)

- [A] $1\frac{2}{3}$ [B] $3\frac{4}{15}$ [C] $2\frac{1}{3}$ [D] $1\frac{5}{6}$

30. $2\frac{5}{8} \div 1\frac{1}{6} =$ (Reduce your answer)

- [A] $2\frac{1}{7}$ [B] $7\frac{1}{2}$ [C] $\frac{4}{9}$ [D] $2\frac{1}{4}$

Topic 8 - Fractions: Multiply, Divide, and Combined Operations

31. $2\frac{1}{2} \div 4\frac{3}{7} =$ (Reduce your answer)

[A] $1\frac{27}{35}$

[B] $15\frac{5}{6}$

[C] $\frac{7}{12}$

[D] $\frac{35}{62}$

Obj. 121 - Divide whole numbers and fractions

32. $6 \div 3\frac{1}{2} =$ (Reduce your answer)

[A] 21

[B] $\frac{1}{2}$

[C] $1\frac{5}{7}$

[D] $\frac{1}{21}$

33. $20 \div \frac{2}{5} =$ (Reduce your answer)

[A] 50

[B] 10

[C] $\frac{1}{10}$

[D] $\frac{1}{50}$

34. $\frac{2}{7} \div 14 =$ (Reduce your answer)

[A] $\frac{1}{7}$

[B] $\frac{1}{49}$

[C] 4

[D] 1

Obj. 122 - Word Problems: Divide fractions and mixed numbers

35. A baker at Herbie's Bakery misread the directions and used $4\frac{1}{8}$ cups of flour in a recipe. It was $1\frac{3}{4}$ times too much flour. How much flour should the baker have used?

[A] $9\frac{3}{7}$ cups

[B] $2\frac{11}{28}$ cups

[C] $\frac{14}{33}$ cups

[D] $2\frac{5}{14}$ cups

Topic 8 - Fractions: Multiply, Divide, and Combined Operations

36. The top walking deck of a sail boat is $16\frac{4}{9}$ feet long. This is only $\frac{5}{18}$ of the length of the boat. How long is the boat?
- [A] $58\frac{1}{5}$ ft [B] $58\frac{2}{5}$ ft [C] $59\frac{2}{5}$ ft [D] $59\frac{1}{5}$ ft
37. A ribbon 84 meters long must be cut into pieces that are each $2\frac{2}{5}$ meters long. How many pieces of ribbon will there be after it is cut?
- [A] 35 pieces [B] $38\frac{2}{11}$ pieces [C] 34 pieces [D] $201\frac{3}{5}$ pieces
38. Paige walked a distance of 6 miles to deliver a storage box. She stopped every $\frac{1}{5}$ mile to rest. How many times did Paige stop?
- [A] 30 times [B] 13 times [C] 32 times [D] 11 times
39. Karen used a 12-foot piece of wood to make blocks. She divided it into $\frac{2}{4}$ -foot pieces. How many blocks did Karen have?
- [A] 22 blocks [B] 14 blocks [C] 16 blocks [D] 24 blocks
40. Pam's cross-country team did an exercise to improve coordination and concentration. Each athlete tested how far she could run without dropping any of the eight ping-pong balls she was holding on a plate. Nichele ran $\frac{1}{4}$ of a mile. Nichele's distance was only $\frac{5}{6}$ of Pam's distance. How far did Pam run before dropping a ping-pong ball?
- [A] $\frac{5}{24}$ of a mile [B] $4\frac{4}{5}$ miles [C] $\frac{2}{15}$ of a mile [D] $\frac{3}{10}$ of a mile

Topic 8 - Fractions: Multiply, Divide, and Combined Operations

47. Richard is cooking for 1,500 people at a large banquet. He is using a recipe which serves 300 people and calls for $5\frac{5}{6}$ quarts of milk. Round the amount of milk in the original recipe to the nearest quart, and estimate the amount of milk that Richard needs to use for the large banquet.

[A] 35 quarts

[B] 29 quarts

[C] 30 quarts

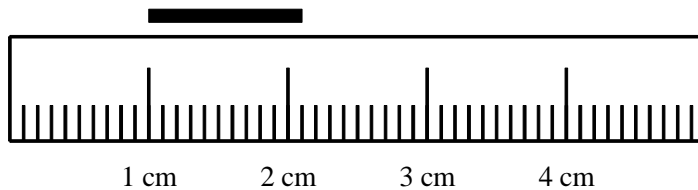
[D] 31 quarts

Topic 9 - Measurement, Time, and Temperature

7. The arrow is pointing to which value on the ruler below?



- [A] 4 inches [B] $4\frac{7}{8}$ inches [C] $3\frac{7}{8}$ inches [D] $3\frac{3}{4}$ inches
8. What is the length of the segment above the ruler below? (The ruler is not drawn to scale.)



- [A] 1.3 cm [B] 0.9 cm [C] 1.1 cm [D] 1.1 mm
- Obj. 128 - Convert customary length**
9. 12 yards = ___ inches?
[A] 147 in. [B] 36 in. [C] 144 in. [D] 432 in.
10. How many 1-foot rulers laid end to end would it take to equal 7 yards?
[A] 14 one-foot rulers [B] 22 one-foot rulers
[C] 21 one-foot rulers [D] 7 one-foot rulers
11. Convert 29 inches to feet.

- [A] 348 ft [B] $2\frac{5}{12}$ ft [C] 87 ft [D] $9\frac{2}{3}$ ft

Obj. 129 - Convert customary weight

12. 54 ounces = ___ lb ___ oz
[A] 5 lb 4 oz [B] 5 lb 6 oz [C] 4 lb 6 oz [D] 3 lb 6 oz

Topic 9 - Measurement, Time, and Temperature

13. Convert 64 ounces to pounds.
[A] 256 lb [B] 4 lb [C] 640 lb [D] 16 lb
14. Convert 2 tons to pounds.
[A] 400 lb [B] 200 lb [C] 4,000 lb [D] 40,000 lb
15. Convert 7 lb 14 oz to ounces.
[A] 231 ounces [B] 126 ounces [C] 84 ounces [D] 98 ounces

Obj. 130 - Convert customary capacity

16. Convert 24 pints to gallons.
[A] 3 gal [B] 2.4 gal [C] 48 gal [D] 1.5 gal
17. Convert 200 pints to gallons.
[A] 25 gal [B] 400 gal [C] 12.5 gal [D] 20 gal
18. Which statement is incorrect?
[A] 12 quarts = 3 gallons [B] 16 pints = 4 quarts
[C] 40 pints = 5 gallons [D] 24 cups = 12 pints

Obj. 131 - Word Problems: Customary measurement

19. Maria wants to cut a piece of plywood that is $6\frac{3}{4}$ feet long into strips 9 inches wide.
How many *inches* are equivalent to $6\frac{3}{4}$ feet?
[A] 81 in. [B] 57 in. [C] 27 in. [D] 66 in.
20. A truck weighs about 6 tons. How many pounds are in six tons?
[A] 12,000 pounds [B] 6,000 pounds
[C] 1,200 pounds [D] 13,000 pounds

Topic 9 - Measurement, Time, and Temperature

21. A soup recipe calls for $5\frac{1}{2}$ pints of water. How many cups are equivalent to

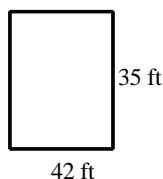
$5\frac{1}{2}$ pints?

- [A] 176 c [B] 0.364 c [C] 22 c [D] 11 c

22. George's truck engine holds $1\frac{3}{4}$ gallons of oil. If there are 6 quarts of oil in the engine now, how many more quarts of oil does George need to add to fill the engine to capacity?

- [A] 1 quart [B] 2 quarts [C] 13 quarts [D] 5 quarts

23. A scale drawing is to be made of the floor of a rectangular room. The room dimensions are 42 feet by 35 feet. The scale to be used is 7 feet = 1 inch. What will be the perimeter of the room in the scale drawing?



- [A] 22 in. [B] 17 in. [C] 1,470 in. [D] 154 in.

Obj. 132 - Convert metric length

24. Three meters is how many millimeters?

- [A] 30 mm [B] 3,000 mm [C] 300 mm [D] 0.3 mm

25. Convert 12 kilometers to meters.

- [A] 120,000 m [B] 1.2 m [C] 0.012 m [D] 12,000 m

26. Convert 335 centimeters to meters.

- [A] 3,350 m [B] 33,500 m [C] 3.35 m [D] 0.335 m

27. Complete: 3 meters = _____ millimeters

- [A] 300 [B] 30 [C] 3,000 [D] 30,000

Topic 9 - Measurement, Time, and Temperature

28. Complete: 9.7 millimeters = _____ centimeters
[A] 0.97 [B] 970 [C] 97 [D] 0.097

Obj. 133 - Convert metric weight

29. 3 milligrams = ____ grams
[A] 0.003 g [B] 30 g [C] 0.3 g [D] 3,000 g
30. Convert 3 milligrams to grams.
[A] 30 g [B] 3,000 g [C] 0.003 g [D] 0.3 g
31. Convert 1,516 grams to kilograms.
[A] 15.16 kg [B] 1.516 kg [C] 0.01516 kg [D] 0.1516 kg

Obj. 134 - Convert metric capacity

32. Convert 2.5 kiloliters to liters.
[A] 0.25 liters [B] 250 liters [C] 25 liters [D] 2,500 liters
33. 632 milliliters = ____ liters
[A] 632,000 L [B] 6.32 L [C] 0.632 L [D] 63,200 L
34. Convert 3,700 kiloliters to liters.
[A] 3,700,000 liters [B] 370,000 liters [C] 3.7 liters [D] 37 liters

Obj. 135 - Mixed units of length

35. Convert 8 feet 2 inches to inches.
[A] 98 inches [B] 16 inches [C] 26 inches [D] 94 inches
36. 4 meters + 3 centimeters = ____ centimeters
[A] 4,003 [B] 7 [C] 403 [D] 43
37. Convert 10 yd 1 ft to feet. [A] 61 ft [B] 31 ft [C] 121 ft [D] 13 ft

Topic 9 - Measurement, Time, and Temperature

Obj. 136 - Word Problems: Metric measurement

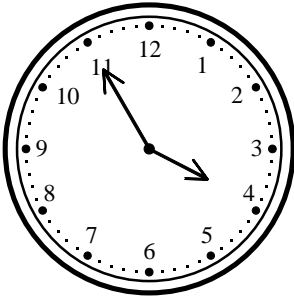
38. The height of the ceiling in Mrs. Wagner's classroom is 3.3 m high. Mrs. Wagner is 1.89 m tall. How far is the ceiling from the top of her head?
- [A] 3.3 m [B] 5.19 m [C] 1.41 m [D] 1.89 m
39. A cup contains 86.5 milliliters of milk. How many liters of milk does it contain?
- [A] 8.65 liters [B] 86.5 liters [C] 0.865 liters [D] 0.0865 liters
40. A rope is 11.7 centimeters long. What is its length in meters?
- [A] 1,170 meters [B] 1.17 meters [C] 117 meters [D] 0.117 meters
41. A spool of wire weighs 30 kilograms. What is its weight in milligrams?
- [A] 0.00003 mg [B] 3,000,000 mg [C] 0.00003 mg [D] 30,000,000 mg
42. A sunflower was 2.1 meters high one week ago. In 7 days it grew 26 centimeters. Find the current height of the sunflower.
- [A] 2.36 m [B] 28.15 cm [C] 28.1 cm [D] 2.31 m

Obj. 137 - Operations with customary measure

43. Add 4 ft 1 in. and 10 ft 7 in.
- [A] 22 in. [B] 14 ft 8 in. [C] 5 ft 17 in. [D] 264 ft
44. Subtract 3 tons 1,350 lb from 9 tons 1,070 lb.
- [A] 1,346 tons 1,061 lb [B] 6 tons 280 lb
[C] 1,347 tons 1,061 lb [D] 5 tons 1,720 lb
45. Divide 177 pounds 8 ounces by 8.
- [A] 23 lb 2 oz [B] 22 lb $4\frac{1}{2}$ oz [C] 22 lb 3 oz [D] $88\frac{1}{2}$ lb 4 oz
46. A carpenter cuts 6 ft 6 in. from a board of length 8 ft 2 in. What is the length of the board after the cut?
- [A] 1 ft 8 in. [B] 2 ft 8 in. [C] 1 ft 4 in. [D] 3 ft 4 in.

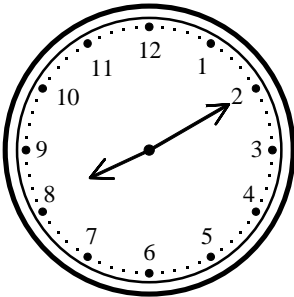
Obj. 138 - Calculate elapsed time

47. If it is afternoon, what time will it be 2 hours and 50 minutes?



- [A] 3:45 a.m. [B] 6:45 p.m. [C] 6:11 a.m. [D] 7:45 p.m.

48. If it is morning, what time was it 4 hours and 15 minutes ago?



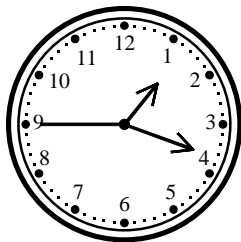
- [A] 3:55 a.m. [B] 4:55 a.m. [C] 8:02 p.m. [D] 3:02 p.m.

49. What is the time 8 hours after 11:00 p.m.?

- [A] 7:00 a.m. [B] 3:00 p.m. [C] 7:00 p.m. [D] 3:00 a.m.

Topic 9 - Measurement, Time, and Temperature

50. Susan looked at her watch for the time. The watch showed the following display:



She checked the time again 20 seconds later. What time was it then, to the nearest second?

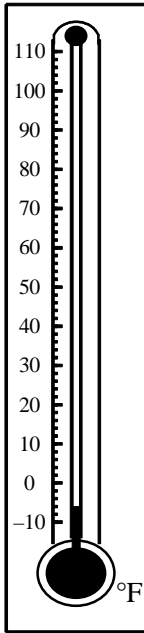
- [A] 1:18:65 [B] 1:38:45 [C] 1:19:05 [D] 21:18:45

Obj. 139 - Thermometers and temperature

51. The temperature is 65°F . What kind of clothing would you wear outdoors?
- [A] sweatshirt and jeans [B] jacket, mittens and hat
[C] T-shirt and light pants [D] tank top and shorts
52. You are having a snowball fight. Which is the most likely outdoor temperature?
- [A] 68°F [B] 54°F [C] 29°F [D] 99°F

Topic 9 - Measurement, Time, and Temperature

53. Name the temperature that the thermometer shows.



[A] -6°F

[B] 0°F

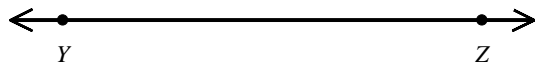
[C] -2°F

[D] -10°F

Topic 10 - Geometry

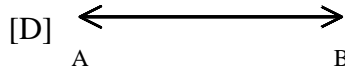
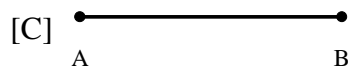
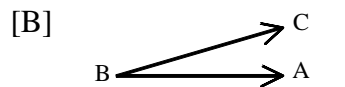
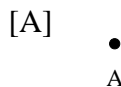
Obj. 140 - Points, lines, segments, rays, and angles

1. Which of the following best describes the figure below?

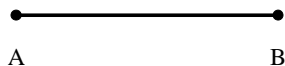


- [A] \overleftrightarrow{YZ} [B] \overrightarrow{YZ} [C] \overline{YZ} [D] \overrightarrow{ZY}

2. Which figure shows an angle?



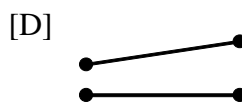
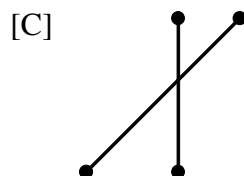
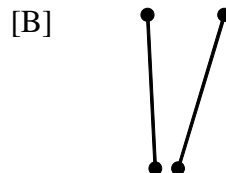
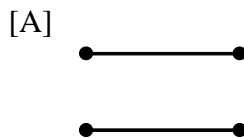
3. What word best describes the figure?



- [A] point [B] line [C] segment [D] ray

Obj. 141 - Intersecting, parallel, and perpendicular lines

4. Which line segments below are intersecting?

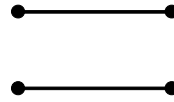


5. Which line segments below appear to be parallel?

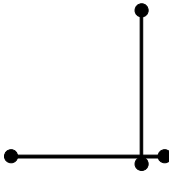
[A]



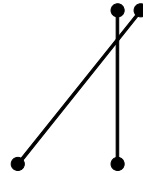
[B]



[C]



[D]

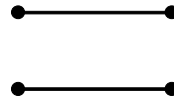


6. Which line segments below appear to be perpendicular?

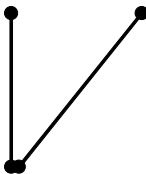
[A]



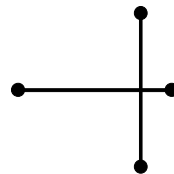
[B]



[C]

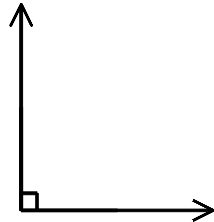


[D]



Obj. 142 - Classify angles

7. The angle shown below is acute, obtuse, right, or straight?



[A] right

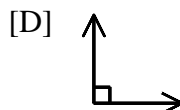
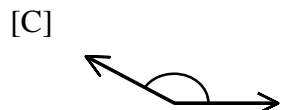
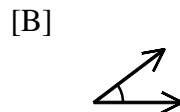
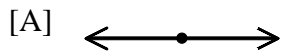
[B] obtuse

[C] straight

[D] acute

Topic 10 - Geometry

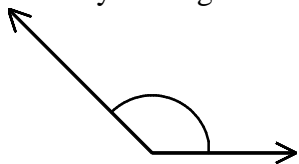
8. Which of the following is a straight angle?



9. The measure of angle A is 47° . Classify angle A .

- [A] straight [B] acute [C] obtuse [D] right

10. Classify the angle below.



- [A] straight [B] obtuse [C] right [D] acute

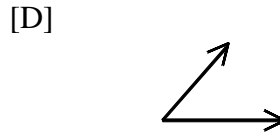
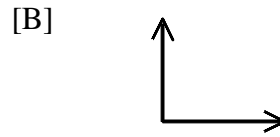
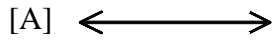
Obj. 143 - Measure angles

11. Approximate the measure of the angle:

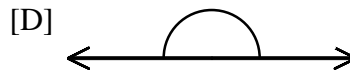
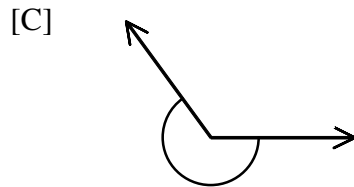
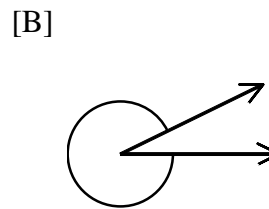
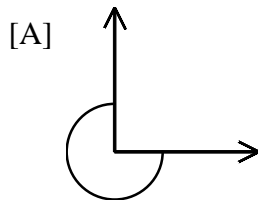


- [A] 340° [B] 90° [C] 180° [D] 170°

12. Which angle measures 113° ?

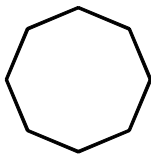


13. Which angle measures 234° ?



Obj. 144 - Identify polygons

14. Name the polygon.



- [A] quadrilateral [B] triangle [C] octagon [D] pentagon

15. Name a polygon with 4 sides.

- [A] quadrilateral [B] octagon [C] pentagon [D] triangle

Topic 10 - Geometry

16. Which one of the statements below is false?

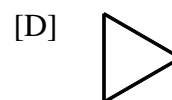
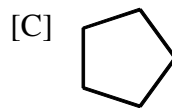
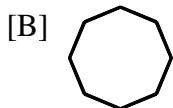
[A] A pentagon has 5 angles.

[B] A quadrilateral has 4 angles.

[C] A pentagon has 7 sides.

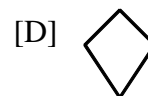
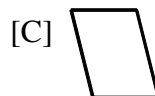
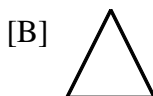
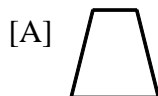
[D] A quadrilateral has 4 sides.

17. Which of these figures is a pentagon?

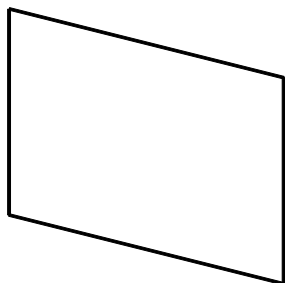


Obj. 145 - Classify quadrilaterals

18. Which figure is a kite?



19. Which does *not* describe the figure correctly?



[A] polygon

[B] rhombus

[C] parallelogram

[D] quadrilateral

20. Select the geometric figure that possesses all of the following characteristics:

(1) quadrilateral

(2) diagonals equal

(3) opposite sides are parallel

[A] parallelogram

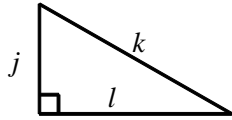
[B] rectangle

[C] rhombus

[D] trapezoid

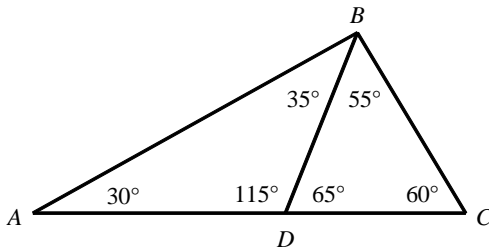
Obj. 146 - Classify triangles by angles and sides

21. Classify the triangle.



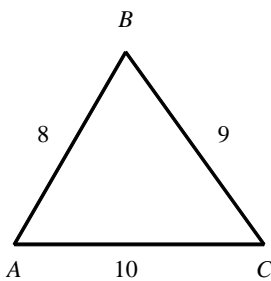
- [A] obtuse [B] right [C] acute [D] equilateral

22. Name a right triangle.



- [A] $\triangle ABC$ [B] $\triangle BDC$ [C] $\triangle ADB$ [D] none of these

23. Classify $\triangle ABC$ as equilateral, isosceles, or scalene.

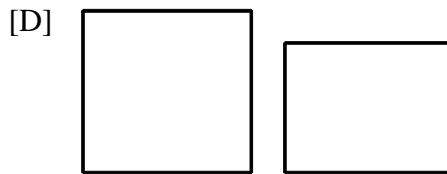
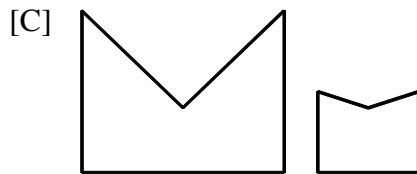
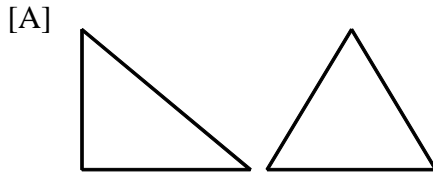


- [A] isosceles [B] equilateral [C] scalene [D] none of these

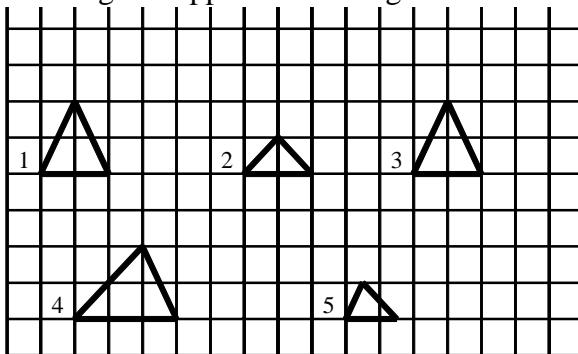
Topic 10 - Geometry

Obj. 147 - Congruent and similar figures

24. Which best represents a pair of similar figures?



25. Which figures appear to be congruent?



[A] 3 and 4

[B] 1 and 3

[C] 4 and 5

[D] 1, 3, and 4

26. Fill in the blank to make the statement true.

Similar polygons _____.

[A] always have corresponding angles with equal measure.

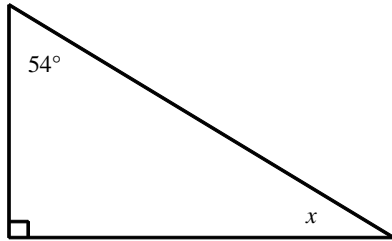
[B] sometimes have angles with equal measure.

[C] always have sides with equal measure.

[D] never have sides with equal measure.

Obj. 148 - Missing angle in triangles

27. What is the measure of angle x ?



- [A] 36° [B] 144° [C] 72° [D] 126°

28. Two angles of a right triangle measure 90° and 10° . What is the measure of the third angle?

- [A] 80° [B] 170° [C] 100° [D] 117°

29. In triangle XYZ , the measure of $\angle X = 55^\circ$ and the measure of $\angle Z = 56^\circ$. Find the measure of $\angle Y$.

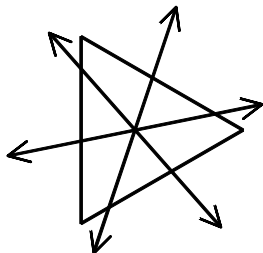
- [A] 146° [B] 145° [C] 69° [D] 111°

Topic 10 - Geometry

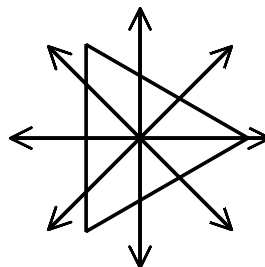
Obj. 149 - Lines of symmetry

30. Which figure shows all lines of symmetry?

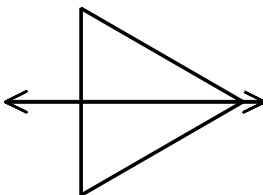
[A]



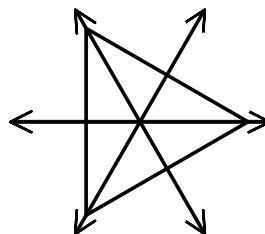
[B]



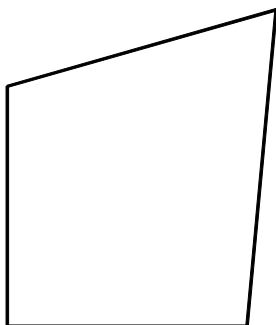
[C]



[D]



31. For the figure below, draw all the lines of symmetry.



How many lines of symmetry are there?

[A] 2

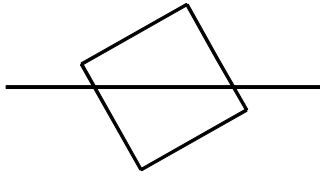
[B] 1

[C] 4

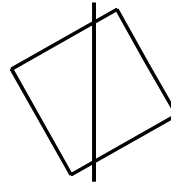
[D] none

32. Which figure shows a line of symmetry?

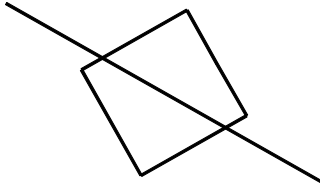
[A]



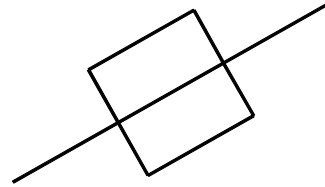
[B]



[C]

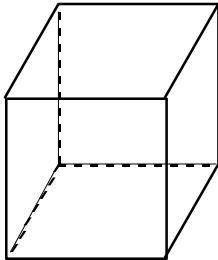


[D]



Obj. 150 - Count faces, edges, and vertices

33. Find the number of vertices for the figure below.



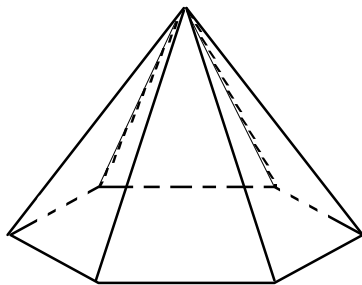
[A] 8 vertices

[B] 12 vertices

[C] 9 vertices

[D] 6 vertices

34. Find the number of edges for the figure below.



[A] 15 edges

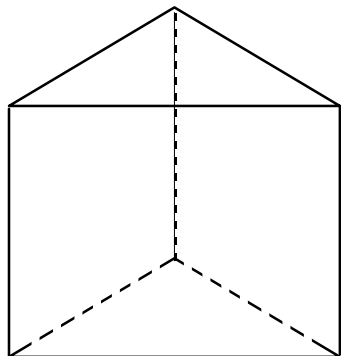
[B] 12 edges

[C] 11 edges

[D] 14 edges

Topic 10 - Geometry

35. Find the number of faces for the figure below.



[A] 6 faces

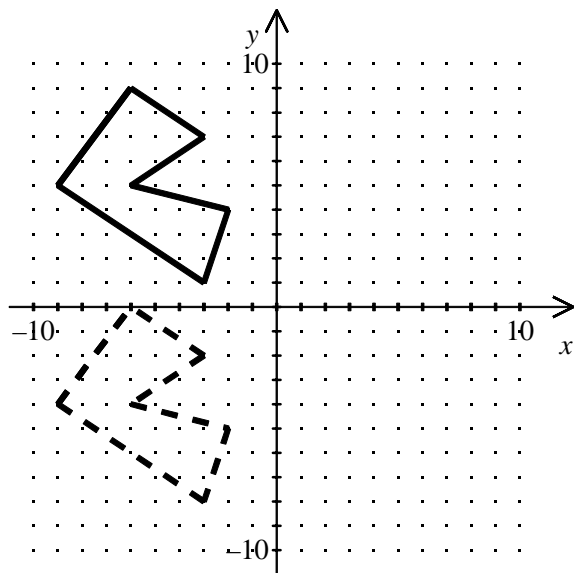
[B] 7 faces

[C] 8 faces

[D] 5 faces

Obj. 151 - Flips, turns, and slides

36. The change in position from the solid figure to the dotted figure is best described as a --

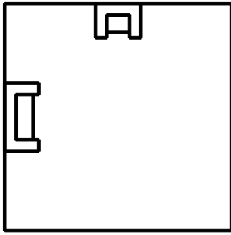


[A] turn

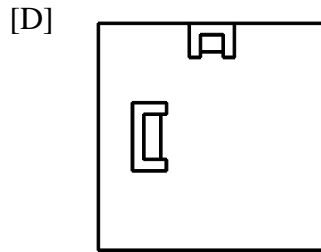
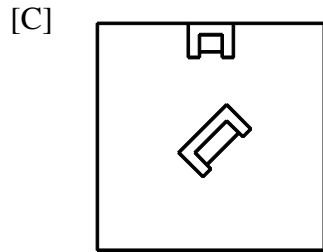
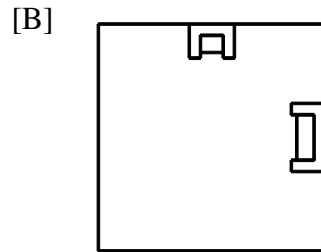
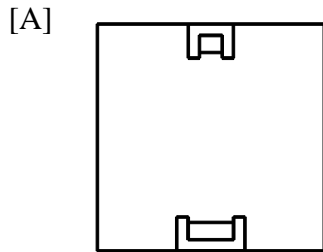
[B] flip

[C] slide

37. Look at the arrangement of the sofa and chair in the room.

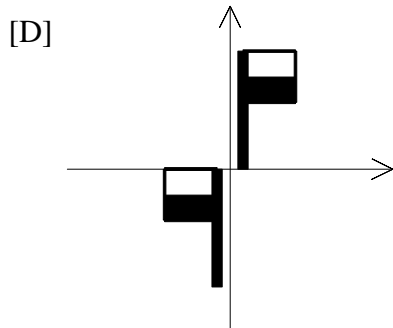
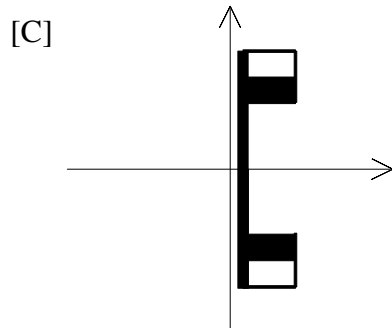
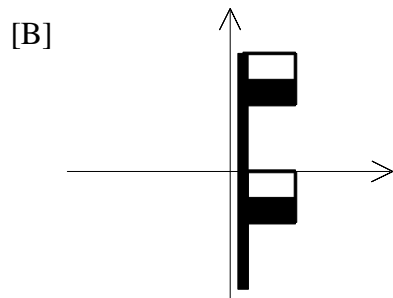
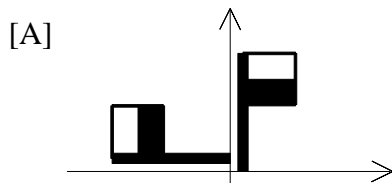


Which room arrangement shows a slide of the sofa?



Topic 10 - Geometry

38. Which picture shows a turn of the flag?

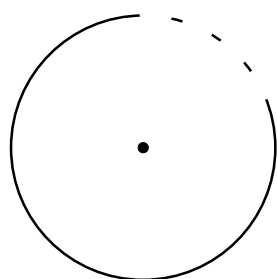


Obj. 152 - Parts of a circle

39. What is the name for the line segment that contains two points of a circle and its center?

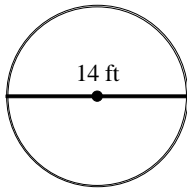
- [A] radius [B] circumference [C] arc [D] diameter

40. Identify the dotted part of the circle.



- [A] radius [B] circumference [C] arc [D] chord

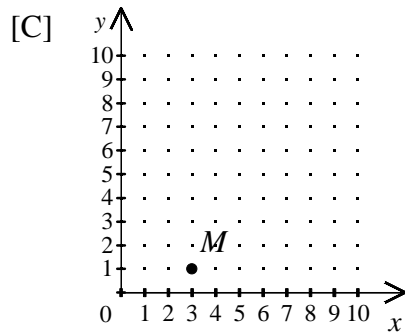
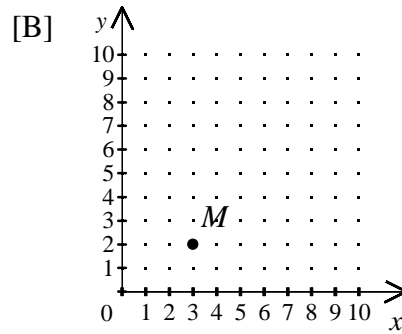
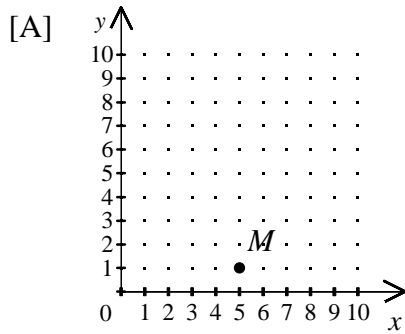
41. The diameter of a circle is 14 feet. What is its radius?



- [A] 28 ft [B] 3.5 ft [C] 7 ft [D] 21 ft

Obj. 153 - Plot and name ordered pairs (first quadrant)

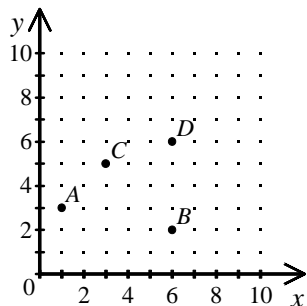
42. Plot the point $M(3, 1)$.



[D] none of these

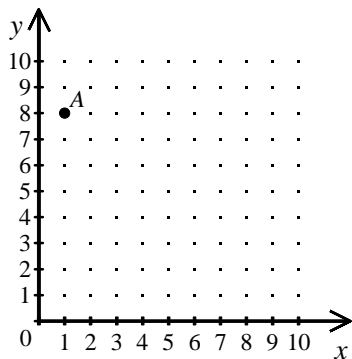
Topic 10 - Geometry

43. State the coordinates of each point.



- [A] $A(6, 6), B(3, 5), C(6, 2), D(1, 3)$
- [B] $A(3, 1), B(2, 6), C(5, 3), D(6, 6)$
- [C] $A(1, 3), B(6, 2), C(3, 5), D(6, 6)$
- [D] $A(3, 5), B(2, 6), C(6, 6), D(3, 1)$

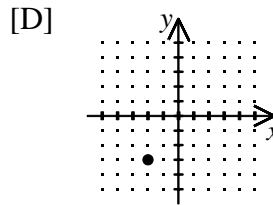
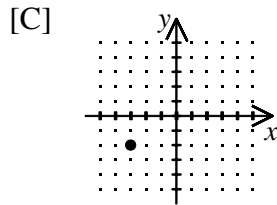
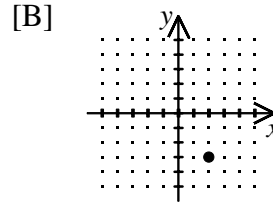
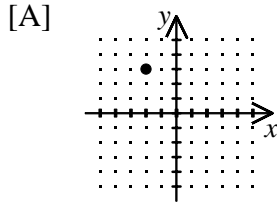
44. Identify the coordinates of point A.



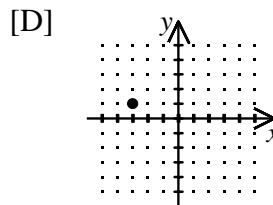
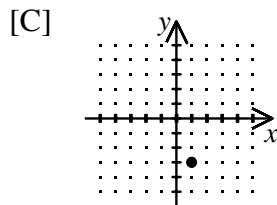
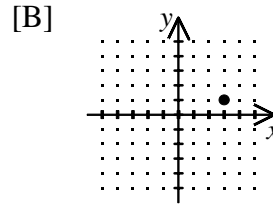
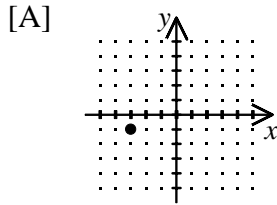
- [A] (1, 8)
- [B] (2, 8)
- [C] (1, 9)
- [D] (8, 1)

Obj. 154 - Plot and name ordered pairs (all quadrants)

45. Graph the point $(-2, -3)$.

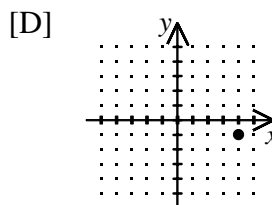
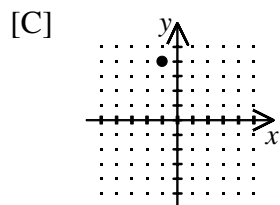
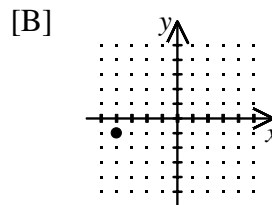
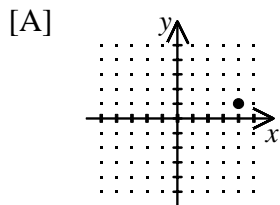


46. Graph the point $(-3, 1)$.

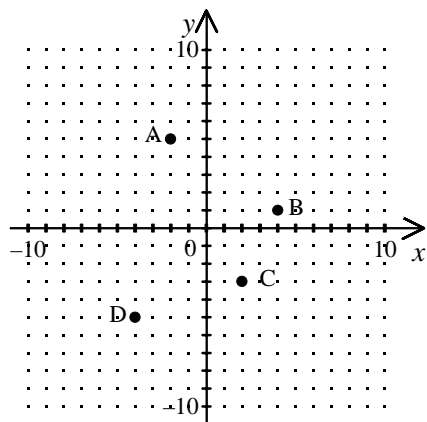


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47. Graph the point $(4, -1)$.



48. Name the coordinates of the points A, B, C, and D.



[A] $A(-2, 5)$, $B(1, 4)$, $C(2, -3)$, $D(-5, -4)$

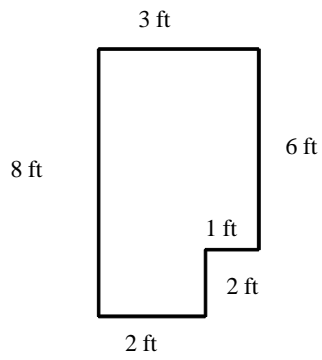
[B] $A(5, -2)$, $B(4, 1)$, $C(-3, 2)$, $D(-4, -5)$

[C] $A(5, -2)$, $B(1, 4)$, $C(-3, 2)$, $D(-5, -4)$

[D] $A(-2, 5)$, $B(4, 1)$, $C(2, -3)$, $D(-4, -5)$

Topic 11 - Perimeter, Area, and Volume

6. Find the perimeter of the shape shown below.



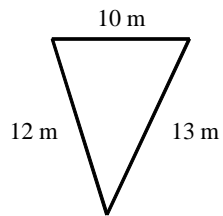
[A] 19 ft

[B] 20 ft

[C] 16 ft

[D] 22 ft

7. Find the perimeter.



[A] 35 m

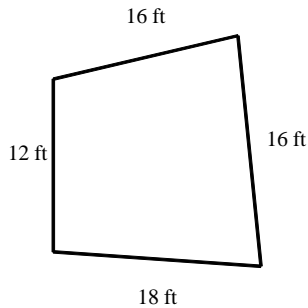
[B] 45 m

[C] 37 m

[D] 29 m

Obj. 157 - Word Problems: Perimeter

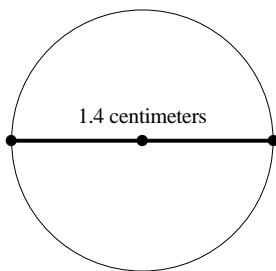
8. This is a drawing of the flower bed that Henry is making. What is the perimeter of the flower bed?



- [A] 288 ft^2 [B] 60 ft [C] 62 ft [D] 192 ft^2
9. Ralph wants to put up a fence around his rectangular garden. The garden measures 12 feet by 23 feet. How much fencing material does he need?
- [A] 276 feet [B] 70 feet [C] 311 feet [D] 35 feet
10. Bonnie is sewing a ribbon border around a square banner. The banner measures 6 feet on each side. How much ribbon does Bonnie need?
- [A] 30 ft [B] 18 ft [C] 24 ft [D] 12 ft

Obj. 158 - Circumference of a circle

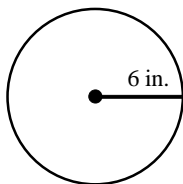
11. Calculate the circumference of the circle. Use 3.14 for π .



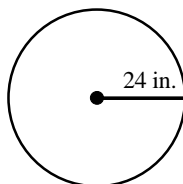
- [A] 2.198 centimeters [B] 4.396 centimeters
[C] 1.5386 centimeters [D] none of these

Topic 11 - Perimeter, Area, and Volume

12. Find the circumference of a circle that has a radius of 3 feet. Use 3.14 for p .
[A] 1.047 ft [B] 18.84 ft [C] 2.093 ft [D] none of these
13. What is the circumference of the circle below in terms of p ?



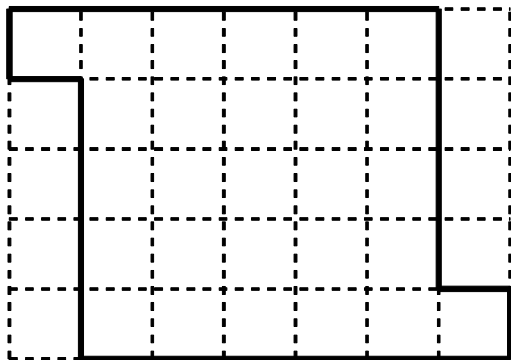
- [A] $20p$ in. [B] $12p$ in. [C] $24p$ in² [D] $36p$ in.
14. Find the circumference of the circle. Use $p = 3.14$.



- [A] 150.72 in. [B] 41.72 in. [C] 1,808.64 in. [D] 41.72 in²

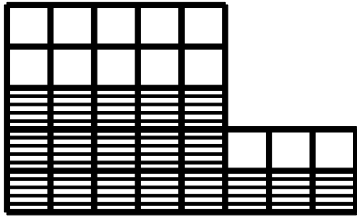
Obj. 159 - Area on a grid

15. Each box on the grid below is one square unit. Find the area of the figure drawn on the grid. How many square units is it?



- [A] 32 square units [B] 31 square units
[C] 27 square units [D] 35 square units

16. What is the area of the shaded region?



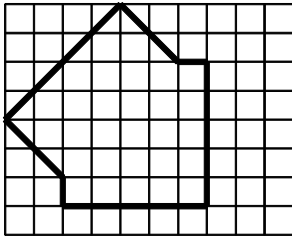
[A] 21 square units

[B] 40 square units

[C] 18 square units

[D] 13 square units

17. What is the area of the figure drawn on the grid?



[A] 31 square units

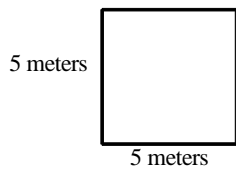
[B] 33 square units

[C] 30 square units

[D] 39 square units

Obj. 160 - Area of rectangles and squares

18. What is the area of this square?



[A] 25 square meters

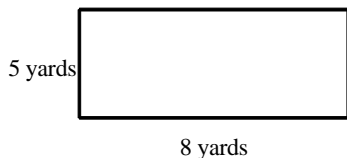
[B] 25 meters

[C] 23 meters

[D] 10 square meters

Topic 11 - Perimeter, Area, and Volume

19. What is the area of this rectangle?



- [A] 80 square yards [B] 29 square yards
[C] 40 square yards [D] 13 square yards
20. Find the area of a rectangle 9 meters by 21 meters.
[A] 60 m^2 [B] 60 m [C] 189 m [D] 189 m^2
21. Calculate the area of a rectangle 10 meters by 15 meters.
[A] 150 m [B] 50 m [C] 150 m^2 [D] 50 m^2
22. Find the area of a rectangle that measures 6 yd by 8 yd.
[A] 96 yd^2 [B] 48 yd^2 [C] 14 yd^2 [D] 28 yd^2
23. A rectangle is 8 inches long and 5 inches wide. Find its area.
[A] 13 square inches [B] 26 square inches
[C] 400 square inches [D] 40 square inches
24. A rectangle is 19 inches long. The area of the rectangle is 266 square inches. What is the width?
[A] 64 in. [B] 12 in. [C] 66 in. [D] 14 in.

Obj. 161 - Word Problems: Area of rectangles and squares

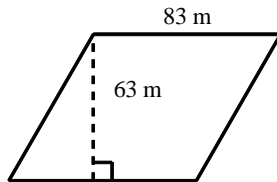
25. Patricia wants to carpet the rectangular floor of the den in her house. If her floor measures 20 feet by 13 feet, how many square feet of carpeting will she have to buy in order to cover the floor wall-to-wall?
[A] 260 ft^2 [B] 33 ft^2 [C] 280 ft^2 [D] 520 ft^2

Topic 11 - Perimeter, Area, and Volume

26. As part of a community improvement project, Rosita is painting a mural on an 11-by 24-foot wall. How many square feet will she have to paint?
- [A] 35 square feet [B] 70 square feet
[C] 264 square feet [D] 259 square feet
27. Felisha is making a square tablecloth. If the sides are 118 inches, what is the area of the tablecloth?
- [A] 472 in^2 [B] 236 in^2 [C] $13,932 \text{ in}^2$ [D] $13,924 \text{ in}^2$
28. Sven is making a rain cover for a square sandbox with sides 3 feet long. How much area does he need to cover?
- [A] 12 ft [B] 9 ft^2 [C] 9 ft [D] 12 ft^2

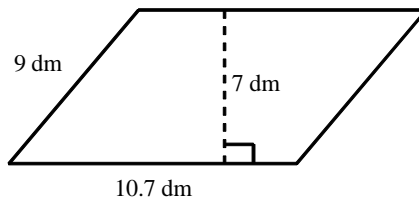
Obj. 162 - Area of parallelograms

29. Find the area.



- [A] $5,229 \text{ m}^2$ [B] $5,644 \text{ m}^2$ [C] $6,059 \text{ m}^2$ [D] $4,914 \text{ m}^2$

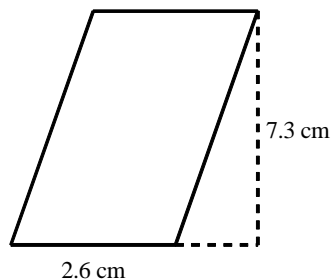
30. Find the area:



- [A] 114.49 dm^2 [B] 74.9 dm^2 [C] 35.4 dm^2 [D] 42.8 dm^2

Topic 11 - Perimeter, Area, and Volume

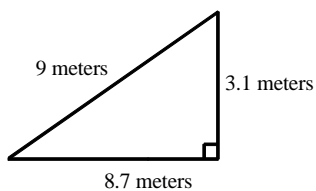
31. Find the area of the parallelogram.



- [A] 9.49 cm^2 [B] 56.21 cm^2 [C] 18.98 cm^2 [D] 20.02 cm^2

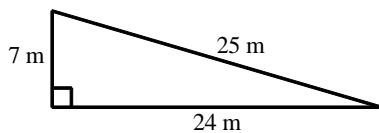
Obj. 163 - Area of triangles

32. Find the area:



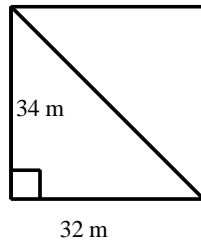
- [A] 13.485 square meters [B] 13.95 square meters
[C] 27.9 square meters [D] 23.6 square meters

33. Find the area of the triangle.



- [A] 313 m^2 [B] 168 m^2 [C] 84 m^2 [D] 56 m^2

34. A farmer divided his plot into two equal triangular sections. Find the area of each of the new sections.



- [A] 66 square meters [B] 50 square meters
[C] 1,088 square meters [D] 544 square meters

Obj. 164 - Word Problems: Area of triangles

35. Camille is moving up to the attic and wants to paint a wall green. The wall is a triangle with a base of 8 feet and a height of 11.25 feet. What is the area of the wall?

- [A] 44 ft² [B] 45 ft² [C] 91 ft² [D] 90 ft²

36. Find the area of a triangular piece of cloth 16 centimeters high and 8 centimeters long.

- [A] 128 cm [B] 128 cm² [C] 64 cm² [D] 64 cm

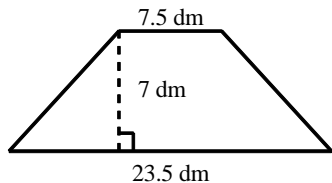
37. Trent is planting an herb garden in the shape of a right triangle that is 3 feet wide and 9 feet long. What is the area of Trent's herb garden?

- [A] 27 square feet [B] 13.5 square feet
[C] 7.5 square feet [D] 12 square feet

Topic 11 - Perimeter, Area, and Volume

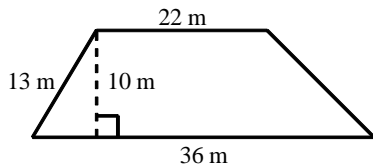
Obj. 165 - Area of trapezoids

38. Find the area:



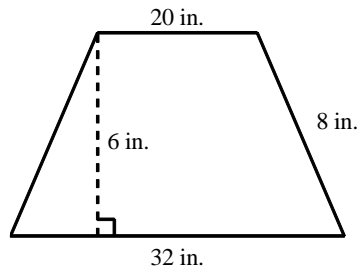
- [A] 82.25 dm^2 [B] 108.5 dm^2 [C] 164.5 dm^2 [D] 217 dm^2

39. Find the area of the trapezoid.



- [A] 290 m^2 [B] 580 m^2 [C] 377 m^2 [D] 754 m^2

40. Find the area:



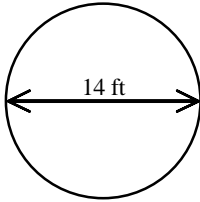
- [A] 416 in^2 [B] 156 in^2 [C] 312 in^2 [D] 208 in^2

Obj. 166 - Area of circles

41. Find the area of a circle whose radius is 7 centimeters. (Use $\pi = 3.14$.)

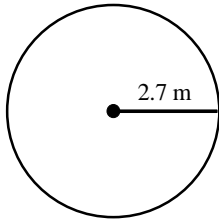
- [A] 141.63 square centimeters [B] 153.86 square centimeters
[C] 307.72 square centimeters [D] 21.98 square centimeters

42. A theater production calls for a prop made of a circular piece of fabric with a diameter of 14 feet.



How much fabric is needed for the prop? (Use $p = 3.14$)

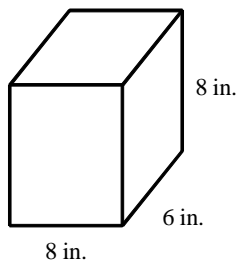
- [A] 153.86 ft [B] 43.96 ft [C] 153.86 ft² [D] 87.92 ft²
43. Find the area of the circle. Use $p = 3.14$.



- [A] 22.89 sq m [B] 91.56 sq m [C] 16.96 sq m [D] 5.72 sq m

Obj. 167 - Volume of rectangular prisms and cubes

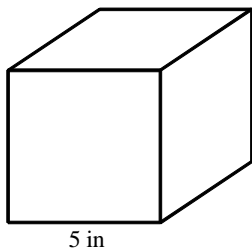
44. Find the volume.



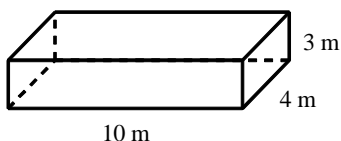
- [A] 364 cubic inches [B] 384 cubic inches
[C] 320 cubic inches [D] 88 cubic inches
45. Find the volume of a rectangular solid that is 9 inches long, 7 inches wide, and 4 inches high.
- [A] 254 in² [B] 254 in³ [C] 252 in² [D] 252 in³

Topic 11 - Perimeter, Area, and Volume

46. Find the volume of a cube 5 inches on each side.



- [A] 15 in^3 [B] 120 in^3 [C] 25 in^3 [D] 125 in^3
47. Find the volume of a cube 6 inches on each side.
- [A] 36 in^3 [B] 216 in^3 [C] 224 in^3 [D] 42 in^3
48. Find the volume of the rectangular prism.



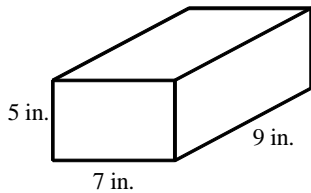
- [A] 17 m^3 [B] 120 m^3 [C] 164 m^3 [D] 60 m^3
- Obj. 168 - Word Problems: Volume**
49. An empty aquarium is 4 feet long, 2 feet wide, and 2 feet high. How many cubic feet of water could this aquarium hold?
- [A] 24 ft^3 [B] 8 ft^3 [C] 16 ft^3 [D] 21 ft^3
50. A rectangular fish tank has a base that is 9 inches by 10 inches. How much water will it take to fill the tank to a depth of 5 inches?
- [A] 450 cu in. [B] 24 cu in. [C] 370 cu in. [D] 34 cu in.
51. A rectangular fish tank has a base that is 3 inches by 10 inches. How much water will it take to fill the tank to a depth of 8 inches?
- [A] 21 in^3 [B] 342 in^3 [C] 268 in^3 [D] 240 in^3

52. A recycling bin is provided for each household. The bin measures 24 inches by 33 inches by 16 inches. Find the volume of the recycling bin.

- [A] 73 in^3 [B] $12,691 \text{ in}^3$ [C] $12,672 \text{ in}^3$ [D] 54 in^3

Obj. 169 - Surface area of rectangular prisms

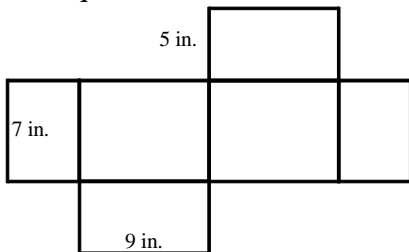
53. David works for Outside Matters gift wrap service. When using expensive wrapping paper, the company charges customers by the square inch. David is going to wrap the box below.



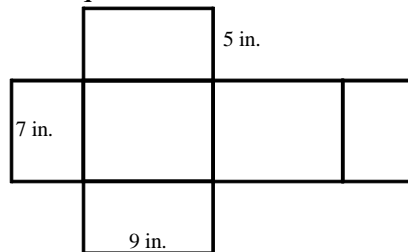
He makes a 2-dimensional diagram of the box and uses that to figure the total surface area.

Which diagram correctly shows the surface area and how the box would look unfolded?

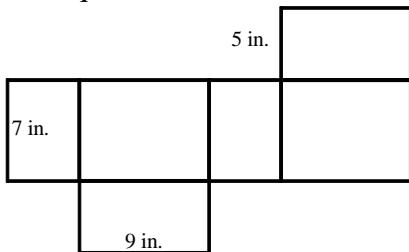
[A] 241 sq in.



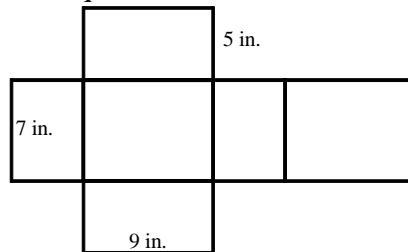
[B] 241 sq in.



[C] 286 sq in.

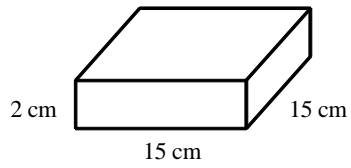


[D] 265 sq in.



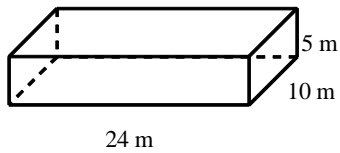
Topic 11 - Perimeter, Area, and Volume

54. Find the surface area:



- [A] 256 cm^2 [B] 570 cm^2 [C] 480 cm^2 [D] 450 cm^2

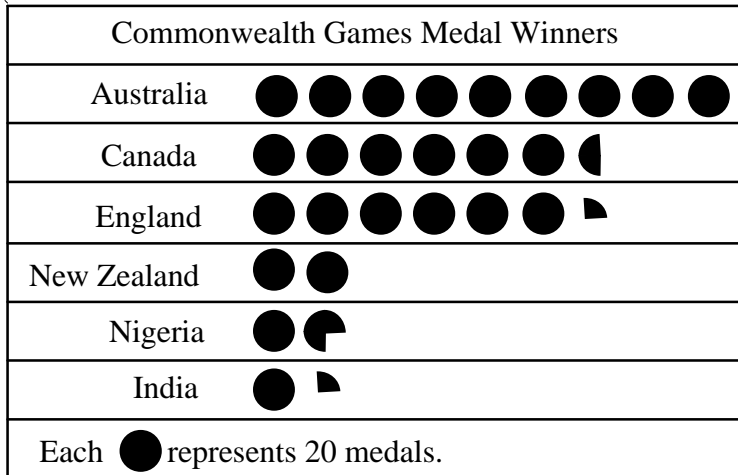
55. Find the surface area of the rectangular prism.



- [A] 410 m^2 [B] 820 m^2 [C] 1200 m^2 [D] 39 m^2

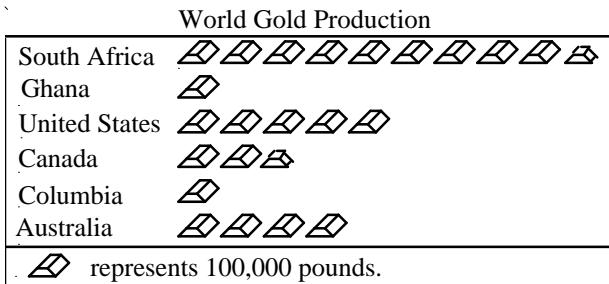
Obj. 170 - Pictographs

1. The pictograph shows the top 6 countries that won medals at the 1994 Commonwealth Games in Victoria, British Columbia.



Approximately how many more medals did Australia win than New Zealand?

- [A] about 140 [B] about 5 [C] about 180 [D] about 40
2. The pictograph shows recent gold production throughout the world.

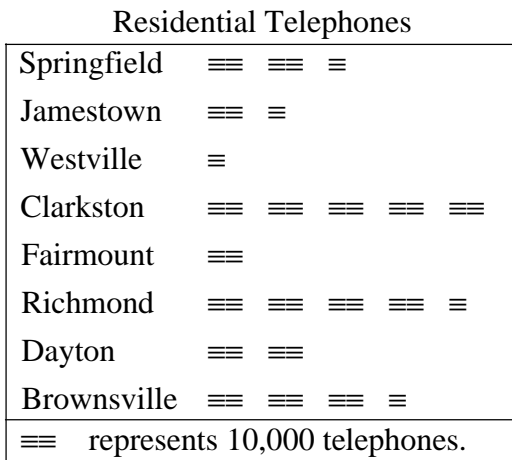


How many more pounds of gold were mined in Canada than in Columbia?

- [A] 250,000 lb [B] 40,000 lb [C] 140,000 lb [D] 150,000 lb

Topic 12 - Graphs, Probability, and Statistics

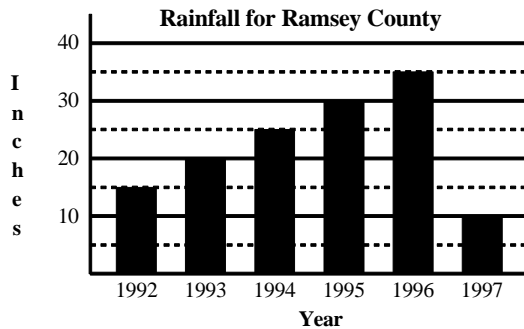
3. The combined number of residential telephones in the cities of Dayton, Fairmount, and Jamestown is equal to the number of telephones in which city?



- [A] Clarkston [B] Brownsville [C] Westville [D] Richmond

Obj. 171 - Bar graphs

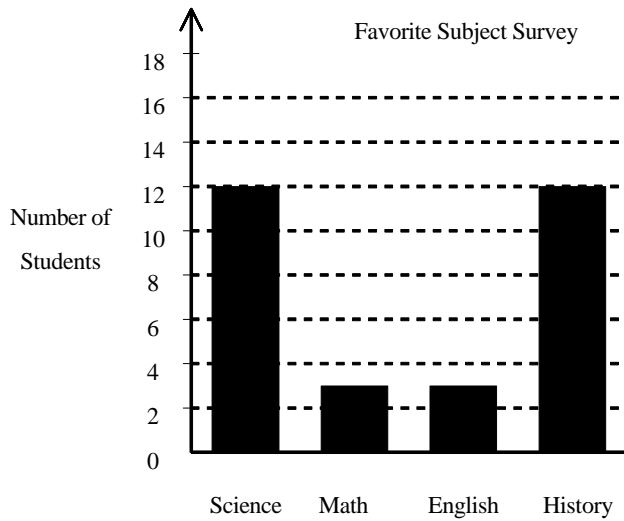
4. The graph below shows the yearly rainfall in Ramsey County for the years 1992 to 1997. Find the amount of rainfall for 1993.



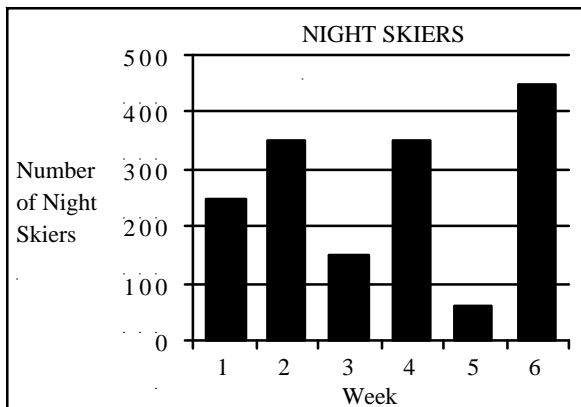
- [A] 35 inches [B] 20 inches [C] 30 inches [D] 25 inches

Topic 12 - Graphs, Probability, and Statistics

5. In all, how many students said English or math was their favorite subject?



- [A] 4 students [B] 0 students [C] 3 students [D] 6 students
6. The graph shows the number of people who went night skiing over a period of 6 weeks.

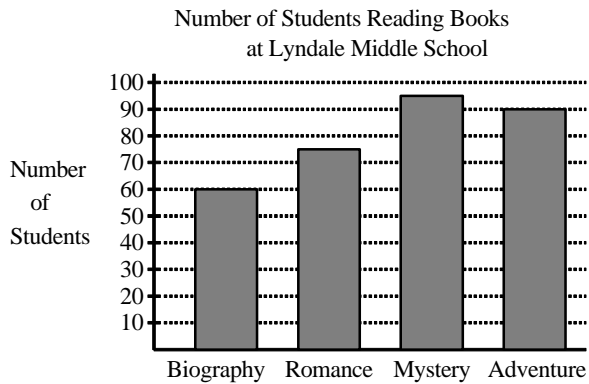


Which week had the least amount of night skiers?

- [A] week 3 [B] week 6 [C] week 5 [D] week 2

Topic 12 - Graphs, Probability, and Statistics

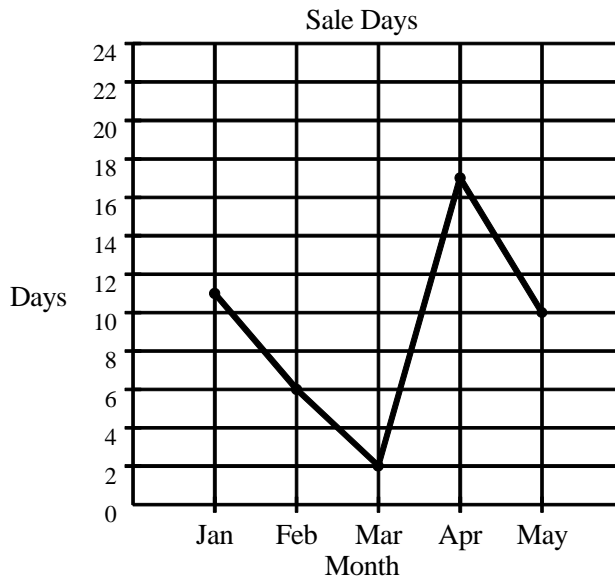
7. Use the bar graph below to find out how many more students read romance novels than biographies.



- [A] 135 students [B] 15 students [C] 185 students [D] 5 students

Obj. 172 - Line graphs

8. During which month did All You Want and More Department Store have the most sale days?



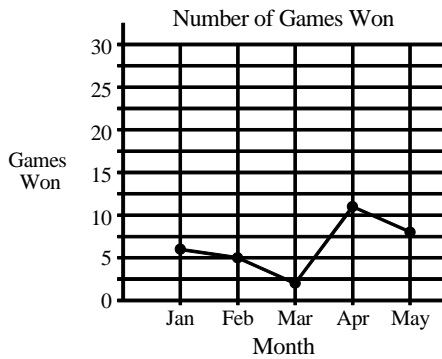
- [A] March [B] January [C] April [D] May

Topic 12 - Graphs, Probability, and Statistics

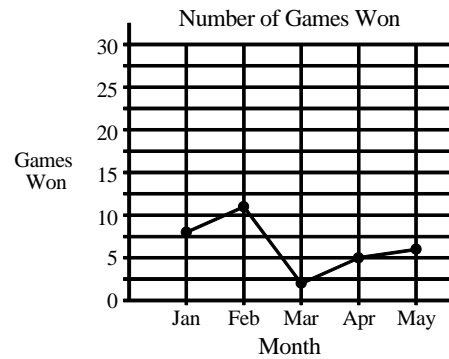
9. The school newspaper wants to display the data for all the games won during each month from January to May. Which graph would be correct?

| Month | Games Won |
|-------|-----------|
| Jan | 6 |
| Feb | 5 |
| Mar | 2 |
| Apr | 11 |
| May | 8 |

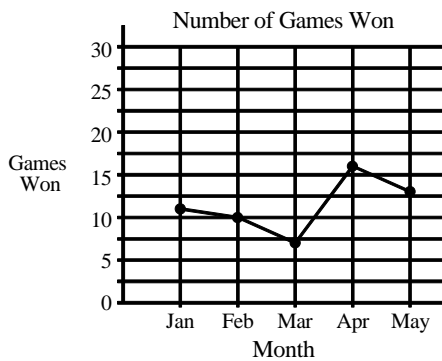
[A]



[B]



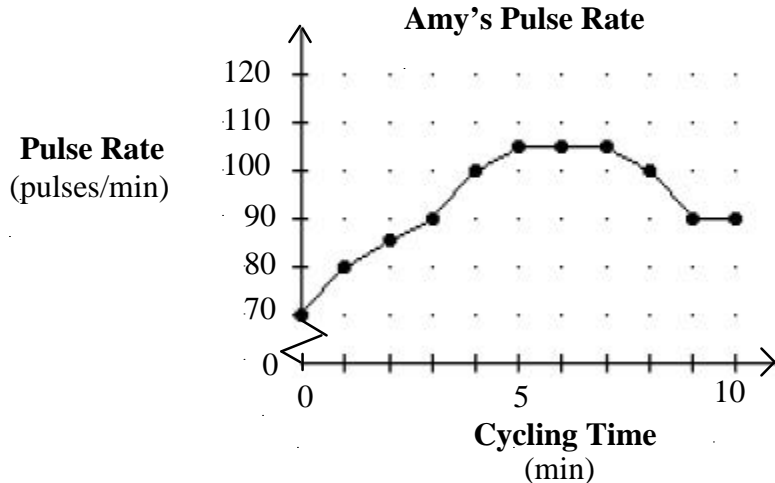
[C]



[D] none of these

Topic 12 - Graphs, Probability, and Statistics

10. The broken-line graph shows Amy's pulse rate during 10 min of cycling.

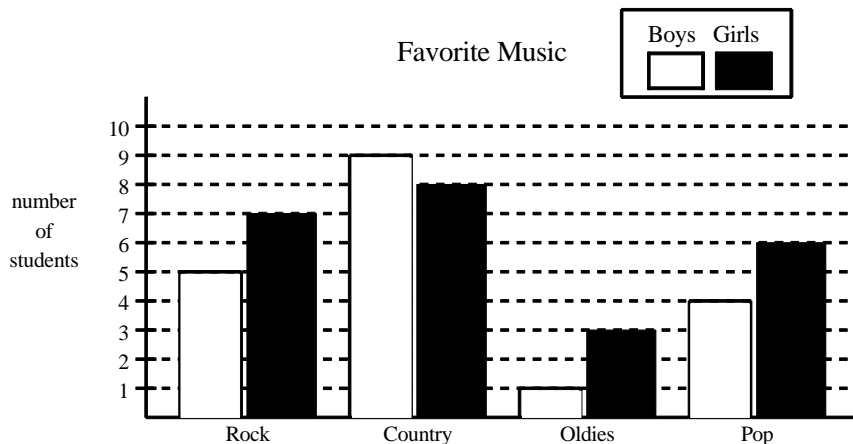


What was Amy's pulse rate at 1 min?

- [A] 70 pulses/min [B] 90 pulses/min
[C] 100 pulses/min [D] 80 pulses/min

Obj. 173 - Double bar graphs

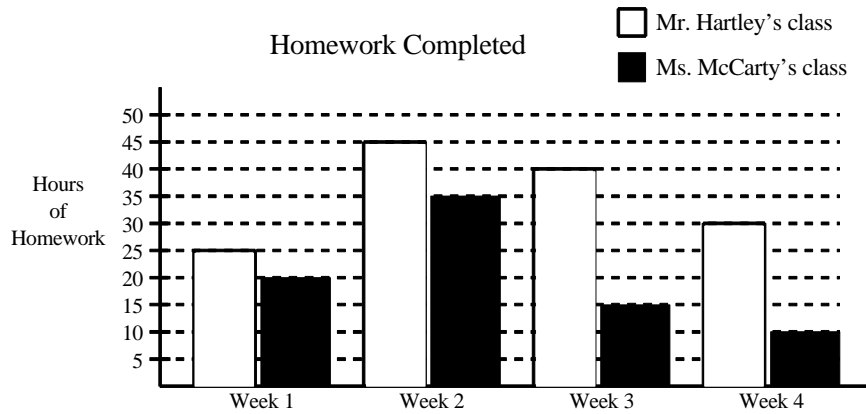
11. Mr. Marpet's class did a survey to compare favorite music among themselves. They displayed the results using a double bar graph. Which music is the most popular with the girls?



- [A] Rock [B] Oldies [C] Pop [D] Country

Topic 12 - Graphs, Probability, and Statistics

12. Mr. Hartley's class and Ms. McCarty's class were competing to find which class could do the most homework. They kept a record of their hours by week for four weeks.

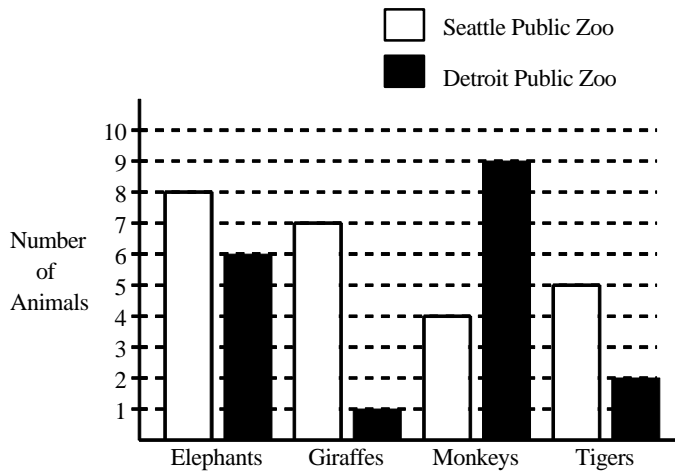


During which week was the difference in homework time the greatest between the two classes?

- [A] week 4 [B] week 3 [C] week 1 [D] none of these

Topic 12 - Graphs, Probability, and Statistics

13. Which table matches the information displayed in this double bar graph?



[A]

| Animal | Seattle | Detroit |
|-----------|---------|---------|
| Elephants | 8 | 6 |
| Giraffes | 7 | 1 |
| Monkeys | 4 | 9 |
| Tigers | 5 | 2 |

[B]

| Animal | Seattle | Detroit |
|-----------|---------|---------|
| Elephants | 8 | 6 |
| Giraffes | 1 | 7 |
| Monkeys | 4 | 9 |
| Tigers | 2 | 5 |

[C]

| Animal | Seattle | Detroit |
|-----------|---------|---------|
| Elephants | 6 | 8 |
| Giraffes | 1 | 7 |
| Monkeys | 4 | 9 |
| Tigers | 2 | 5 |

[D] none of these

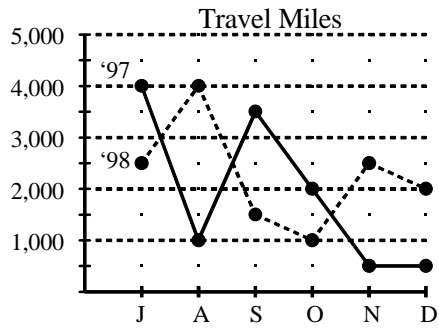
Obj. 174 - Double line graphs

14. Maxine travels often for her job. The table below shows her travel miles for the last six months of 1997 and 1998. Which comparison line graph correctly matches the table?

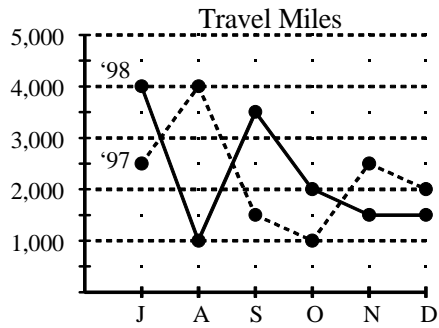
| Travel Miles | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|--------------|-------|-------|-------|-------|-------|-------|
| 1997 Miles | 4,000 | 1,000 | 3,500 | 2,000 | 1,500 | 1,500 |
| 1998 Miles | 2,500 | 4,000 | 1,500 | 1,000 | 2,500 | 2,000 |

Topic 12 - Graphs, Probability, and Statistics

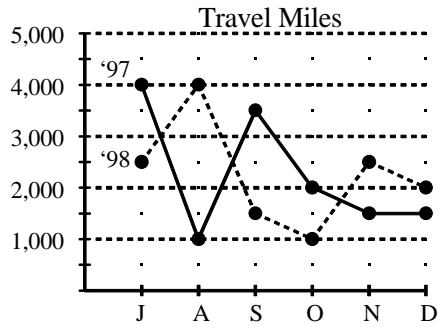
[A]



[B]



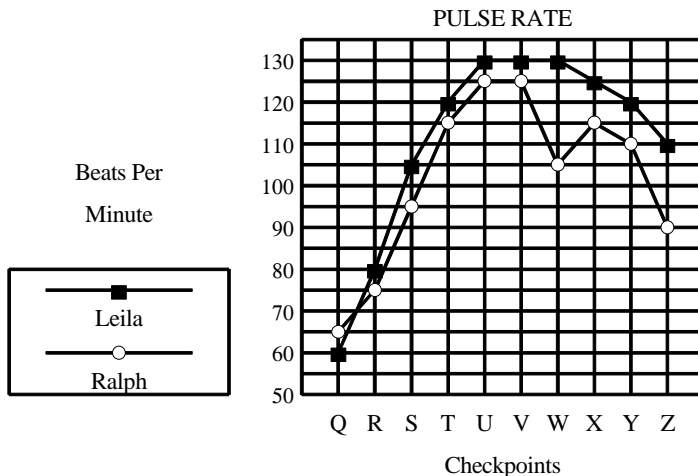
[C]



[D] none of these

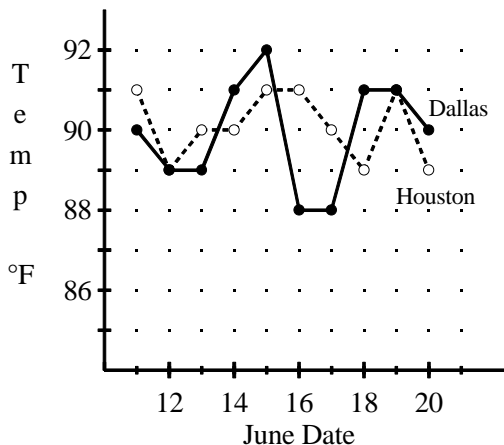
Topic 12 - Graphs, Probability, and Statistics

15. Two experienced runners, Ralph and Leila, agreed to have their pulse rates monitored during a timed exercise test. The graph shows their pulse rates at several checkpoints during the test.



At which checkpoint was the difference between the two pulse rates greatest?

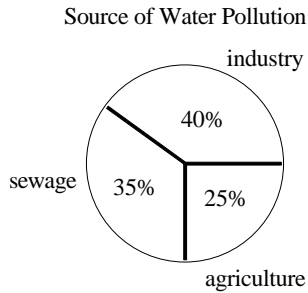
- [A] Z [B] W [C] X [D] Y
16. The double line graph below compares daily high temperatures in Houston and Dallas in June. From the days listed, use the graph below to determine a date that Houston's daily high temperature was higher than that of Dallas.



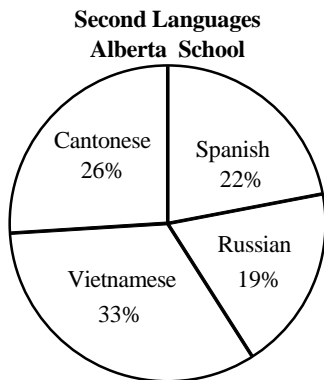
- [A] June 13 [B] June 19 [C] June 18 [D] June 10

Obj. 175 - Circle graphs

17. The circle graph below represents the main sources of water pollution. According to the circle graph, what is the main source of water pollution?



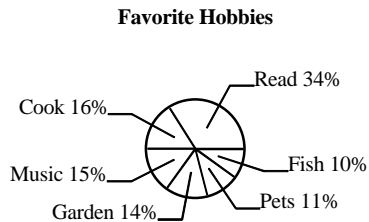
- [A] agriculture [B] industry [C] sewage [D] cannot be determined
18. The circle graph below shows the percentages of main languages spoken at home by the students at Alberta Newcomer School. Use the graph to find out which second language is most commonly spoken in students' homes.



- [A] Cantonese [B] Vietnamese [C] Russian [D] Spanish

Topic 12 - Graphs, Probability, and Statistics

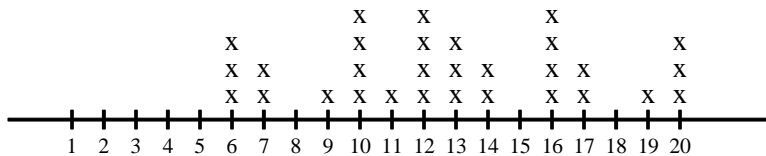
19. In a survey, 200 people were asked what they most like to do in their free time. The 6 most popular answers are shown in the circle graph below. Find the number of people who named fishing.



- [A] 20 named fishing [B] 68 named fishing
 [C] 12 named fishing [D] 50 named fishing

Obj. 176- Line plots

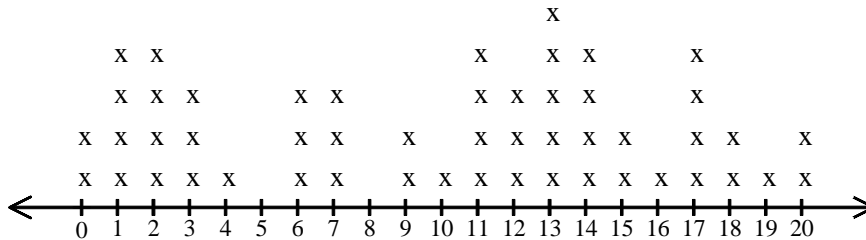
20. The line plot below represents the number of letters written to overseas pen pals by the students at Waverly Middle school. Each x represents 10 students. How many students wrote 11 or more letters?



- [A] 210 students [B] 20 students [C] 200 students [D] 21 students

Topic 12 - Graphs, Probability, and Statistics

21. The line plot below represents the frequency distribution of the number of art projects done by students in grades five and six. How many students did less than 5 or more than 16 projects?

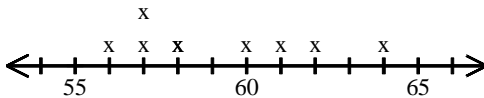


- [A] 25 students [B] 23 students [C] 51 students [D] 28 students

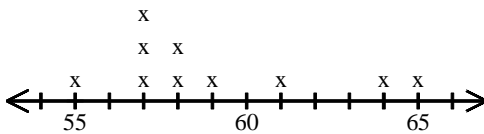
22. The numbers below represent the number of fish passing through a fish ladder during ten-minute periods. Which line plot shows the data?

61, 58, 57, 64, 59, 57, 64, 58, 56, 57

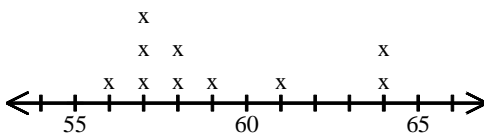
[A]



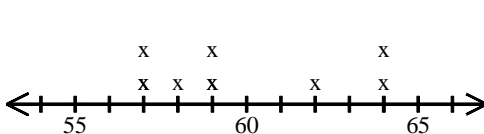
[B]



[C]



[D]



Topic 12 - Graphs, Probability, and Statistics

25. The following stem-and-leaf plot shows the retirement ages of females at a local insurance company.

| Retirement Ages of Female | |
|------------------------------|------------------------|
| Stem | Leaf |
| 5 | 3, 5, 8, 9 |
| 6 | 1, 4, 4, 5, 8, 9 |
| 7 | 1, 1, 2, 5, 7, 7, 9, 9 |
| 8 | 2, 3 |

Which frequency distribution shows the correct number of tallies to match the stem-and-leaf plot?

[A]

| | |
|-------|--|
| 50-59 | |
| 60-69 | |
| 70-79 | |
| 80-89 | |

[B]

| | |
|-------|--|
| 50-59 | |
| 60-69 | |
| 70-79 | |
| 80-89 | |

[C]

| | |
|-------|--|
| 50-59 | |
| 60-69 | |
| 70-79 | |
| 80-89 | |

[D]

| | |
|-------|--|
| 50-59 | |
| 60-69 | |
| 70-79 | |
| 80-89 | |

Topic 12 - Graphs, Probability, and Statistics

Obj. 178 - Time schedules and charts

26. A train traveling at 50 miles per hour leaves for a certain town. Two hours later, a car traveling at 60 miles per hour leaves for the same town and arrives at the same time as the train. If both the train and the car traveled in a straight line, how far is the town from where they started? Use the time table to solve.

| | | | | | | | |
|-------|------|------|------|------|------|------|------|
| | 1 hr | 2 hr | 3 hr | 4 hr | 5 hr | 6 hr | 7 hr |
| train | | | | | | | |
| car | | | | | | | |

| | | | | | | | |
|-------|------|------|-------|-------|-------|-------|-------|
| | 8 hr | 9 hr | 10 hr | 11 hr | 12 hr | 13 hr | 14 hr |
| train | | | | | | | |
| car | | | | | | | |

- [A] 500 miles [B] 720 miles [C] 210 miles [D] 600 miles

27. Open Close

| | | | |
|-----------------|---------|----------|---------|
| Millennium Dome | Daily | 9:00 am | 5:30 pm |
| British Museum | M – F | 9:30 am | 5:15 pm |
| | Sa – Su | 10:30 am | 6:15 pm |
| Tate Gallery | M – Sa | 9:00 am | 5:00 pm |
| | Sun | 10:00 am | 5:00 pm |
| London Eye | Daily | 9:30 am | 5:30 pm |

How many hours per day is the Millennium Dome open on Friday?

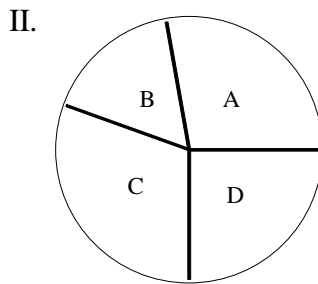
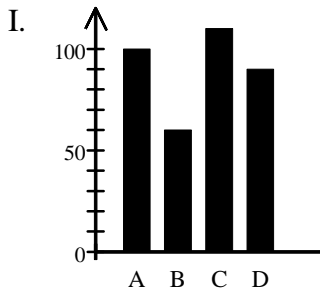
- [A] Seven hours and thirty minutes [B] Eight hours
 [C] Eight hours and forty five minutes [D] Eight hours and thirty minutes
28. A feature film runs 2 h 15 min. The theater requires 11 min between performances, and has 9 min of previews and short subjects to show before the feature. If the third showing of the feature film ends at 12:34, when did the first preview begin?
- [A] 3:34 [B] 4:34 [C] 5:00 [D] 5:45

Obj. 179 - Choose best type of graph

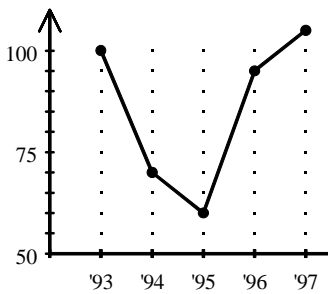
29. Which type of graph would best show the percent of candy sold in several categories?

- [A] bar graph [B] line graph [C] circle graph [D] histogram

30. Which graph or graphs best show parts of a whole?



III.

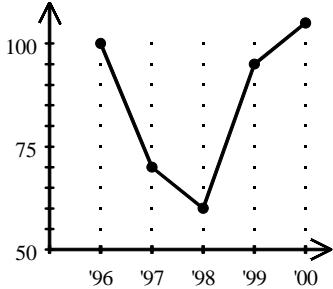


- [A] I, II, or III [B] I or II [C] II [D] III

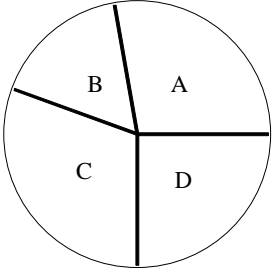
Topic 12 - Graphs, Probability, and Statistics

31. Which graph or graphs would be best for showing the favorite pets of a group of students?

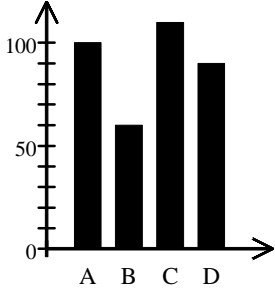
Graph One:



Graph Two:



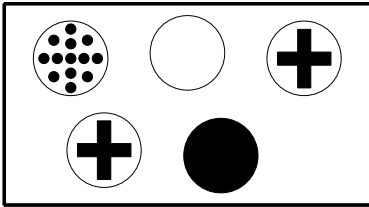
Graph Three:



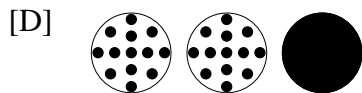
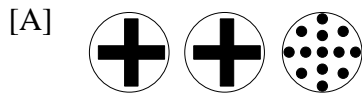
- [A] Graph One or Graph Three
- [B] Graph One, Graph Two, or Graph Three
- [C] Graph One
- [D] Graph Two or Graph Three

Obj. 180 - Find possible outcomes

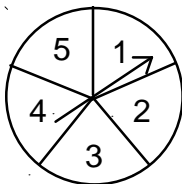
32.



A sewing box contains 5 buttons. They are the same size and shape but have different patterns. If 3 buttons are selected from the box at one time, which is a possible outcome?



33. For a game Sosha needs to spin the spinner once.



How many possible outcomes are there?

[A] 5

[B] 1

[C] 10

[D] 25

Topic 12 - Graphs, Probability, and Statistics

34. A 12-sided die is rolled. It has eight green sides, one red side, two blue sides, and one brown side. How many outcomes are possible? State the most likely outcome(s).

[A] 4; a red or a brown side [B] 5; a green side

[C] 5; a red or a brown side [D] 4; a green side

Obj. 181 - Probability of single events

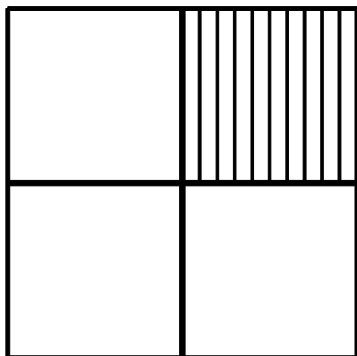
35. What is the probability of drawing a club from a deck of 52 playing cards?

[A] $\frac{13}{100}$ [B] $\frac{1}{4}$ [C] $\frac{1}{3}$ [D] $\frac{1}{2}$

36. A single fair die is tossed. Find the probability of obtaining the number 3.

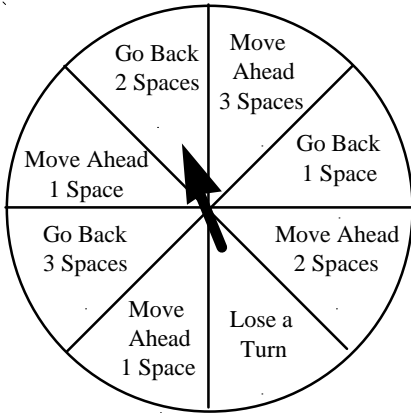
[A] $\frac{1}{6}$ [B] $\frac{2}{3}$ [C] $\frac{5}{6}$ [D] 1

37. If a randomly-thrown dart hits the board below, what is the probability it will hit the *shaded* region?



[A] 0.625 [B] $\frac{1}{4}$ [C] $\frac{3}{4}$ [D] 0.375

38. It is Jane's turn to spin in a game that she is playing with her friends.



What is the probability that Jane will get to move ahead on this spin?

- [A] $\frac{1}{3}$ [B] $\frac{1}{2}$ [C] $\frac{5}{8}$ [D] none of these

Obj. 182 - Means of data sets

39. What is the mean of the following data?

16, 7, 6, 15

- [A] 15 [B] 16 [C] 11 [D] 12

40. What is the mean of the following data?

5, 12, 11, 4, 12, 5, 14

- [A] 7 [B] 9 [C] 11 [D] 8

41. What is the mean of the following set of numbers?

5, 23, 18, 23, 11, 12, 29, 23

- [A] 18 [B] 17 [C] 23 [D] 20.5

Obj. 183 - Medians of data sets

42. Find the median of 60, 32, 82, 54, and 60.

- [A] 58 [B] 60 [C] 82 [D] 57

Topic 12 - Graphs, Probability, and Statistics

43. This table shows the heights, in inches, of the seven Howem cousins.

| Name | Height | | Name | Height |
|-------|--------|--|------|--------|
| Carl | 44 | | Nina | 46 |
| Erin | 40 | | Paul | 52 |
| Kylie | 60 | | Todd | 68 |
| Mitch | 37 | | | |

The Howem cousins stood in a line from tallest to shortest. Who was standing in the middle?

- [A] Todd [B] Nina [C] Erin [D] Paul

44. Find the median of 95, 79, 77, 93, and 77.

- [A] 85.1 [B] 77 [C] 84.2 [D] 79

Obj. 184 - Modes of data sets

45. The amount of rain for July during the past 10 years is given in the table below.

RAIN RECORD

| Year | Rain (in.) |
|------|------------|
| 1990 | 4 |
| 1991 | 0 |
| 1992 | 5 |
| 1993 | 10 |
| 1994 | 4 |
| 1995 | 8 |
| 1996 | 1 |
| 1997 | 7 |
| 1998 | 9 |
| 1999 | 6 |

What is the mode of these amounts of rain?

- [A] 5.4 in. [B] 4 in. [C] 5 in. [D] 5.5 in.

Topic 12 - Graphs, Probability, and Statistics

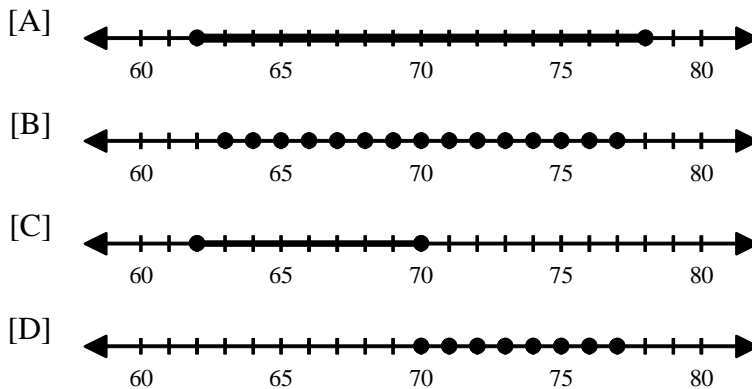
46. What is the mode in the following set of data?
8, 13, 5, 28, 2, 28, 28, 17, 6, 18, 5
- [A] 13 [B] 14.4 [C] 28 [D] 37

47. Name the mode or modes in the following sample.
1, 30, 27, 13, 17, 30, 11, 17, 9, 28, 30
- [A] 30 [B] 19.4 [C] 30, 1 [D] 36

Obj. 185 - Ranges of data sets

48. Find the range of the set of numbers.
13, 10, 32, 10, 40, 18
- [A] 22.2 [B] 15.5 [C] 21 [D] 30
49. Find the range of the set of numbers. [A] 28 [B] 7 [C] 18 [D] 17
5, 8, 23, 11, 12
50. The numbers below represent the number of catalogs received each year by ten families. Find the range of the data.
38, 39, 47, 39, 44, 38, 41, 43, 46, 42
- [A] 9 [B] 14 [C] 47 [D] 38

51. Normal temperature in a fish tank is 70°F . It is safe for the temperature to vary by 8° in either direction. Which number line shows the range of safe temperatures?



Topic 13 - Fractions, Percents, and Decimals

Obj. 186 - Fractions to decimals

- Write $\frac{19}{1,000}$ as a decimal.
[A] 0.0019 [B] 0.019 [C] 1.9 [D] 0.1900
- Write $\frac{3}{8}$ as a decimal. [A] 2.66667 [B] 0.83 [C] 0.375 [D] 3.08
- Write $\frac{4}{5}$ as a decimal. [A] 0.9 [B] 0.8 [C] 0.08 [D] 0.81
- Write $\frac{3}{25}$ as a decimal. [A] 0.13 [B] 0.12 [C] 0.012 [D] 0.22
- Write $\frac{2}{10}$ in decimal form. [A] 0.2 [B] 2.0 [C] 0.02 [D] 0.8
- Write $\frac{26}{100}$ as a decimal. [A] 2.6 [B] 26.0 [C] 0.26 [D] 0.026

Obj. 187 - Decimals to fractions

- Write 0.47 as a fraction. [A] 47 [B] $\frac{5}{100}$ [C] $\frac{47}{100}$ [D] $\frac{47}{10}$
- Write 0.76 and 0.0029 in fraction form with equal denominators.
[A] $\frac{76,000}{10,000}, \frac{29}{10,000}$ [B] $\frac{7,600}{10,000}, \frac{29}{10,000}$
[C] $\frac{760}{10,000}, \frac{29}{10,000}$ [D] $\frac{7,600}{10,000}, \frac{290}{10,000}$
- Write 0.005 as a reduced fraction.
[A] 200 [B] $\frac{1}{200}$ [C] $\frac{5}{10,000}$ [D] $\frac{1}{2}$

Topic 13 - Fractions, Percents, and Decimals

10. What is 0.1 as a fraction? [A] 10 [B] 1 [C] $\frac{1}{100}$ [D] $\frac{1}{10}$

Obj. 188 - Decimals to mixed numbers

11. Write 5.275 as a mixed number.

[A] $5\frac{11}{40}$ [B] $52\frac{3}{4}$ [C] $7\frac{3}{4}$ [D] $5\frac{275}{100}$

12. Write 5.05 as a mixed number with a fraction reduced to lowest terms.

[A] $5\frac{1}{20}$ [B] $5\frac{5}{100}$ [C] $\frac{505}{100}$ [D] $5\frac{1}{10}$

13. Express 16.774 as a mixed number in lowest terms.

[A] $16\frac{43}{50}$ [B] $\frac{8,387}{500}$ [C] $\frac{843}{50}$ [D] $16\frac{387}{500}$

14. Express 2.71 as a mixed number in lowest terms.

[A] $2\frac{71}{90}$ [B] $\frac{14}{5}$ [C] $\frac{271}{100}$ [D] $2\frac{71}{100}$

15. Write 5.45 as a mixed number.

[A] $5\frac{9}{20}$ [B] $5\frac{9}{10}$ [C] $\frac{9}{20}$ [D] $\frac{545}{100}$

Obj. 189 - Mixed numbers to decimals

16. Write $5\frac{26}{100}$ as a decimal number.

[A] 5.26 [B] 50.026 [C] 5.026 [D] 26

17. What is $3\frac{63}{100}$ as a decimal?

[A] 3.63 [B] 0.363 [C] 3.0063 [D] 3.063

Topic 13 - Fractions, Percents, and Decimals

18. Write $5\frac{15}{20}$ as a decimal. [A] 5.75 [B] 5.15 [C] 5.33 [D] 0.515

19. Write $3\frac{1}{16}$ as a decimal. [A] 0.301 [B] 3 [C] 3.01 [D] 3.0625

Obj. 190 - Decimals to percents

20. Write 0.06 as a percent.

[A] 6% [B] $\frac{6}{100}$ % [C] 0.0006% [D] 0.06%

21. Write 6.6 as a percent. [A] 0.066% [B] 6.6% [C] 660% [D] 66%

22. Write 92 as a percent.

[A] 0.92% [B] 9.2% [C] 920% [D] 9,200%

Obj. 191 - Percents to decimals

23. Write 83.8% as a decimal. [A] 0.838 [B] 0.83 [C] 838 [D] $\frac{83.8}{100}$

24. Write 13% as a decimal. [A] 0.13 [B] 0.013 [C] 0.0013 [D] 1.3

25. Write 46.4% as a decimal.

[A] 0.0464 [B] 40.64 [C] 460.4 [D] 0.464

Obj. 192 - Percents to fractions

26. Write 18% as a reduced fraction. [A] $\frac{1}{5}$ [B] $\frac{9}{50}$ [C] $\frac{18}{100}$ [D] $\frac{4}{25}$

27. Write 44% as a reduced fraction. [A] $\frac{22}{25}$ [B] $\frac{22}{5}$ [C] $\frac{44}{25}$ [D] $\frac{11}{25}$

Topic 13 - Fractions, Percents, and Decimals

28. Write 15% as a reduced fraction.

[A] $\frac{3}{10}$

[B] 0.15

[C] $\frac{3}{20}$

[D] $\frac{150}{100}$

Obj. 193 - Fractions to percents

29. Write $\frac{3}{4}$ as a percent. [A] 75% [B] 12% [C] 1.2% [D] 0.75%

30. Write $\frac{2}{5}$ as a percent. [A] 25% [B] 40% [C] 0.4% [D] 52%

31. Express $\frac{2}{5}$ as a percent. [A] 4% [B] 10% [C] 40% [D] 2%

32. Write $\frac{1}{8}$ as a percent.

[A] $\frac{13}{100}\%$

[B] $12\frac{1}{2}\%$

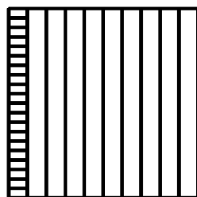
[C] 1,250%

[D] none of these

Topic 14 - Percents, Ratios, and Proportions

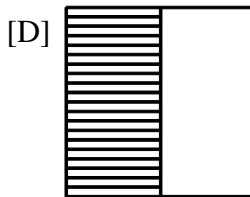
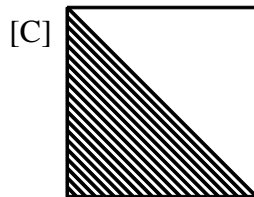
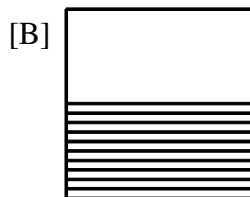
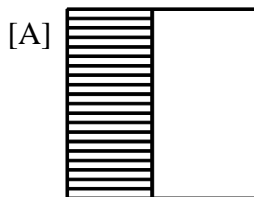
Obj. 194 - Model percents

1. What percent of the figure is *shaded*?

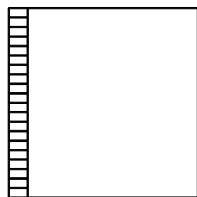


- [A] 10% [B] 90% [C] 1% [D] 50%

2. Which diagram shows 45% *shaded*?



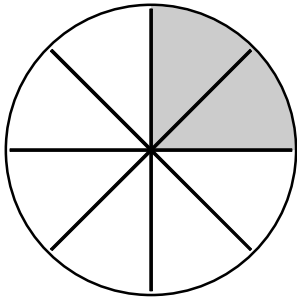
3. Write a percent to estimate the amount *shaded*.



- [A] about 90% [B] about 1% [C] about 50% [D] about 10%

Topic 14 - Percents, Ratios, and Proportions

4. What percent of the circle is *shaded*?



- [A] 15% [B] 25% [C] 0.25% [D] 0.15%

Obj. 195 - Ratio as fraction, lowest terms

5. Express the ratio 8 to 18 as a fraction in lowest terms.

- [A] $\frac{9}{4}$ [B] $\frac{8}{18}$ [C] $\frac{4}{9}$ [D] $\frac{8}{9}$

6. Write the ratio of 53 to 64 as a fraction in simplest form.

- [A] $\frac{64}{53}$ [B] 53.64 [C] $\frac{53}{64}$ [D] $\frac{106}{128}$

7. The ratio of cars to people in New Zealand is 325 to 1,000. Write this ratio as a fraction in reduced form.

- [A] $\frac{13}{20}$ [B] $\frac{325}{1,000}$ [C] $\frac{13}{80}$ [D] $\frac{13}{40}$

8. The male to female ratio in France is 48 to 52. Write this ratio as a fraction in reduced form.

- [A] $\frac{12}{13}$ [B] $\frac{6}{13}$ [C] $\frac{24}{13}$ [D] $\frac{48}{52}$

Obj. 196 - Word Problems: Ratios

9. The Northstar Eagles had a record of 15 wins and 9 losses. What was the ratio of wins to losses?

- [A] 3 to 2 [B] 5 to 3 [C] 3 to 5 [D] 2 to 3

Topic 14 - Percents, Ratios, and Proportions

10. Sarah sold 10 tickets to the school play and Ralph sold 35 tickets. What is the ratio of the number of tickets Sarah sold to the total number of tickets sold?
- [A] $\frac{2}{9}$ [B] $\frac{2}{7}$ [C] $\frac{9}{2}$ [D] $\frac{7}{2}$
11. On Monday, the Handy Video Store rented 84 western videos and 108 drama videos. What was the ratio of western videos to drama videos?
- [A] 7 to 9 [B] 5 to 4 [C] 4 to 5 [D] 9 to 7
12. Ms. Horowitz fills gum and trinket machines in front of grocery stores. In the trinket machine, there are two types of trinkets - lockets and stickers. If Ms. Horowitz puts 15 lockets and 25 stickers in a machine, what is the ratio of lockets to all the trinkets in the machine?
- [A] $\frac{5}{3}$ [B] $\frac{3}{8}$ [C] $\frac{3}{5}$ [D] $\frac{8}{3}$

Obj. 197 - Ratio as rate, lowest terms

13. A 15-oz jar of peanut butter costs \$3.49. Express as a unit price in cents per ounce. (Answer to the nearest cent.)
- [A] $\frac{23¢}{\text{ounce}}$ [B] $\frac{0.24¢}{\text{ounce}}$ [C] $\frac{52¢}{\text{ounce}}$ [D] none of these
14. Write the ratio as a rate in lowest terms:
\$2.50 for 5 muffins
- [A] $\frac{\$0.50}{1 \text{ muffin}}$ [B] $\frac{\$0.45}{1 \text{ muffin}}$ [C] $\frac{\$0.40}{1 \text{ muffin}}$ [D] $\frac{\$0.55}{1 \text{ muffin}}$
15. Write the following as a rate in lowest terms: 150 calories for 70 crackers.
- [A] $\frac{7 \text{ calories}}{15 \text{ crackers}}$ [B] $\frac{150 \text{ crackers}}{70 \text{ calories}}$ [C] $\frac{15 \text{ calories}}{7 \text{ crackers}}$ [D] $\frac{30 \text{ crackers}}{14 \text{ calories}}$

Topic 14 - Percents, Ratios, and Proportions

Obj. 198 - Ratio as percent

16. In a sample of 100 cheetahs, 39 cheetahs had fleas. What percent of cheetahs had fleas?

- [A] 0.39% [B] 39% [C] 61% [D] $\frac{39}{100}$ %

17. On average, 2 of 10 students received A's in science. What percent of students received grades other than A's?

- [A] 2% [B] 20% [C] 0.8% [D] 80%

18. The Martini Paint Store gives a discount to 10 of every 100 shoppers. What percent of the shoppers would receive a discount?

- [A] 0.1% [B] 10% [C] 100% [D] 1%

Obj. 199 - Equivalent ratios

19. Which of the following is *not* equal to the ratio 14 to 49?

- [A] $\frac{12}{42}$ [B] 2 to 7 [C] 2:7 [D] 7:2

20. Which group contains ratios that are all equivalent to $\frac{4}{20}$?

- [A] $\frac{1}{5}, \frac{2}{10}, \frac{3}{15}$ [B] $\frac{5}{1}, \frac{10}{2}, \frac{15}{3}$ [C] $\frac{1}{5}, \frac{2}{15}, \frac{3}{20}$ [D] $\frac{1}{5}, \frac{2}{6}, \frac{3}{7}$

21. Which group contains ratios that are all equivalent to 2:8?

- [A] 4:1, 12:3, 16:4 [B] 1:4, 2:5, 3:6
[C] 1:4, 3:12, 4:16 [D] 1:4, 2:12, 3:16

Topic 14 - Percents, Ratios, and Proportions

Obj. 200 - Unit rates

22. In the playoffs one season, the star hockey player scored 46 goals in 76 games. Express his scoring rate as a unit rate. Round your answer to the thousandths place.
- [A] 0.605 goals per game [B] 0.505 goals per game
[C] 0.395 goals per game [D] 0.295 goals per game
23. Write the unit rate. \$8.45 for 13 cans
- [A] \$0.60 per can [B] \$0.70 per can [C] \$0.50 per can [D] \$0.65 per can
24. A writer was paid \$18,000 for a 3,000-word article. Find the rate per word.
- [A] \$0.17 per word [B] \$6.00 per word
[C] \$1.67 per word [D] \$60.00 per word

Obj. 201 - Percent of a number

25. What is 50% of 8? [A] 9 [B] $\frac{50}{8}$ [C] 0.4 [D] none of these
26. What is 20% of 100? [A] 2 [B] 20 [C] $\frac{20}{100}$ [D] none of these
27. 75% of 376 = [A] 282 [B] 2,820 [C] 2,830 [D] 283

Obj. 202 - Word Problems: Percents

28. Danica wants to buy a bicycle that costs \$110.00. Her parents say Danica must raise 80% of the money herself. How much money must Danica raise?
- [A] \$168 [B] \$88 [C] \$86 [D] \$170
29. Ralph's track team won 60% of the 60 meets they had. How many meets did they win? (Round your answer to the nearest whole number.)
- [A] 33 meets [B] 24 meets [C] 39 meets [D] 36 meets

Topic 14 - Percents, Ratios, and Proportions

30. Kim wants to buy a used car and needs to have a down payment of 15%. If the car Kim wants to buy costs \$3,100, how much down payment will she need?

[A] \$1,500 [B] \$465 [C] \$2,635 [D] \$1,600

Obj. 203 - Ratios as proportions

31. How many of the following are proportions?

$$\frac{2}{7} = \frac{12}{42}; \quad \frac{2}{7} = \frac{10}{56}; \quad \frac{2}{7} = \frac{16}{42}; \quad \frac{2}{7} = \frac{14}{35}$$

[A] 4 [B] 3 [C] 1 [D] 2

32. Which of the following pairs of ratios *do not* form a proportion?

[A] $\frac{3}{5}, \frac{18}{30}$ [B] $\frac{3}{5}, \frac{15}{30}$ [C] $\frac{24}{40}, \frac{3}{5}$ [D] $\frac{3}{5}, \frac{15}{25}$

33. Which of the following does *not* form a proportion with $\frac{3}{8}$?

[A] $\frac{24}{64}$ [B] $\frac{6}{16}$ [C] $\frac{9}{24}$ [D] $\frac{9}{32}$

34. Which of the following proportions is true?

[A] $\frac{3}{4} = \frac{18}{28}$ [B] $\frac{18}{20} = \frac{3}{4}$ [C] $\frac{3}{4} = \frac{15}{24}$ [D] $\frac{30}{40} = \frac{3}{4}$

Obj. 204 - Solve proportions

35. Solve the proportion: $\frac{4}{7} = \frac{u}{119}$

[A] $u = 68$ [B] $u = 66$ [C] $u = 28$ [D] $u = 17$

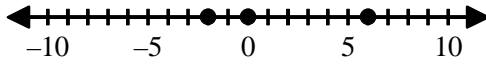
36. $\frac{14}{210} = \frac{?}{300}$ [A] 9.8 [B] 22 [C] 20 [D] 19

37. Solve: $\frac{2}{3} = \frac{6}{x}$ [A] 4 [B] 9 [C] 13 [D] 7

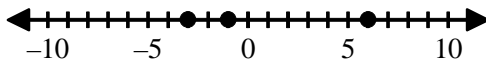
Obj. 206 - Graph integers on number lines

1. Which of the following number lines shows the graphs of 6, 0, and -3?

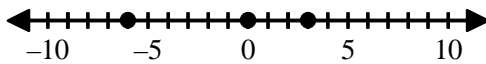
[A]



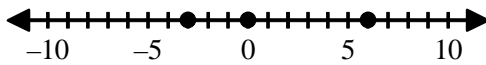
[B]



[C]

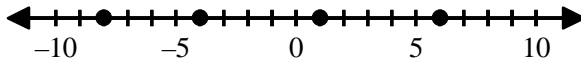


[D]

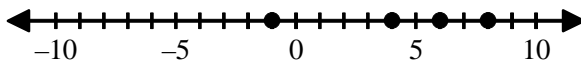


2. Graph -4, +1, -6, and -8 on a number line.

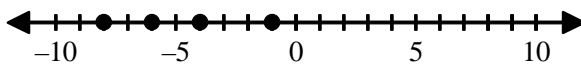
[A]



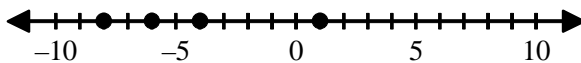
[B]



[C]

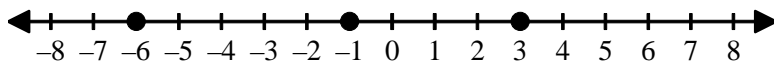


[D]



Topic 15 - Integers

3. Name the points graphed on the number line.



- [A] $\{-6, -1, 3\}$ [B] $\{6, 1, -3\}$ [C] $\{6, -1, 3\}$ [D] $\{-6, 1, -3\}$

Obj. 207 - Compare and order integers

4. Which of the following statements is false?

- [A] $3 \geq 6$ [B] $-3 \geq -6$ [C] $-6 \leq -3$ [D] $6 \geq 3$

5. Which of the following statements is false?

- [A] $-2 > -3$ [B] $3 > 2$ [C] $-3 < -2$ [D] $2 > 3$

6. Write the integers 6, -6, 18, 16, and 2 in order from greatest to least.

- [A] 6, 16, 2, -6, 18 [B] 18, 16, 6, -6, 2
[C] -6, 2, 6, 16, 18 [D] 18, 16, 6, 2, -6

Obj. 208 - Opposites of integers

7. Find the opposite of -165.

- [A] -165 [B] $-\frac{1}{165}$ [C] +165 [D] $+\frac{1}{165}$

8. Find the opposite of -30. [A] -30 [B] $-\frac{1}{30}$ [C] $+\frac{1}{30}$ [D] +30

9. Amir's most recent golf score was +16 (16 above par).
Which is the opposite of +16?

- [A] $-\frac{1}{16}$ [B] -16 [C] $+\frac{1}{16}$ [D] +16

Obj. 209 - Add integers using models

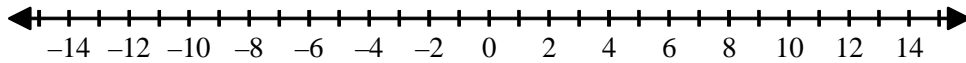
10. Use a number line to add the following: $1 + (-12)$

- [A] 13 [B] -11 [C] 11 [D] -13

11. Use a number line to help you find the sum of: $-20 + 9$

- [A] 11 [B] -11 [C] 29 [D] -29

12. During a game Piper lost 5 points in one turn. On the next turn she lost 3 more points. Use the number line to find the total change in Piper's score caused by these 2 turns.



- [A] -2 [B] +8 [C] +2 [D] -8

Obj. 210 - Add integers

13. $(-3) + (-18) =$ [A] -15 [B] -21 [C] 21 [D] 15

14. $3 + (-12) =$ [A] -9 [B] 9 [C] -15 [D] 15

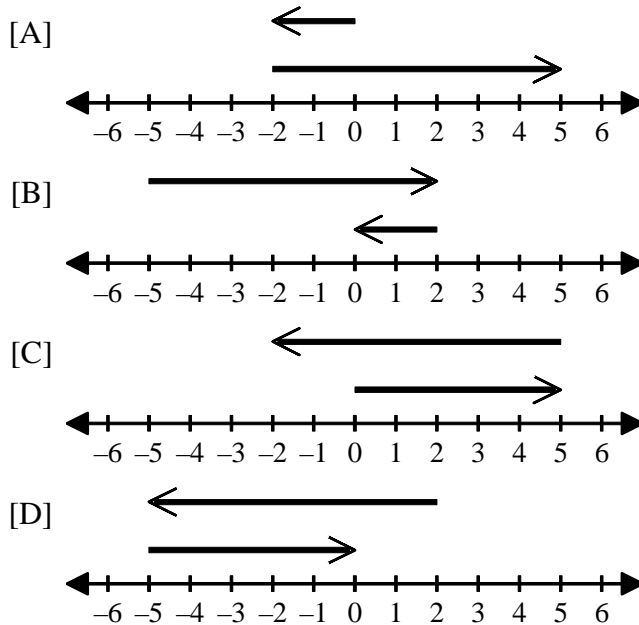
15. $1 + (-6) =$ [A] 5 [B] -5 [C] -7 [D] 7

Topic 15 - Integers

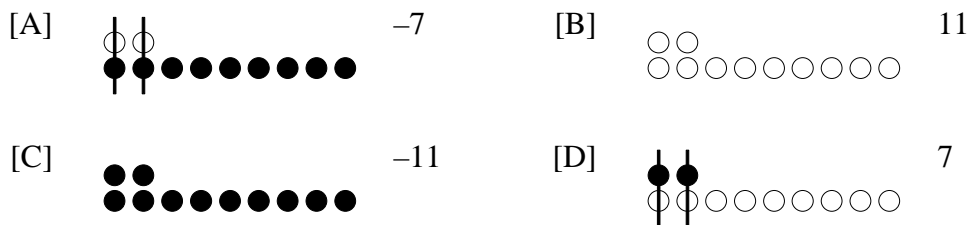
Obj. 211 - Subtract integers using models

16. Use a number line to illustrate the subtraction.

$$-2 - (-7) = 5$$



17. Which model shows the difference $2 - 9$?



Obj. 212 - Subtract positive integers

18. $6 - 13 =$ [A] -19 [B] 19 [C] 7 [D] -7

19. $11 - 23 =$ [A] 12 [B] -12 [C] -34 [D] 34

20. $38 - 40 =$ [A] -78 [B] 78 [C] 2 [D] -2

Obj. 213 - Subtract integers

21. $-16 - (-13) =$ [A] 3 [B] -29 [C] 29 [D] -3
22. $(-3) - (-10) =$ [A] -13 [B] 13 [C] -7 [D] 7
23. $-19 - 95 =$ [A] 76 [B] 114 [C] -76 [D] -114

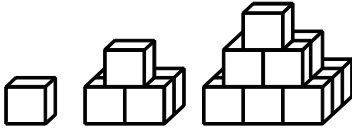
Obj. 214 - Word Problems: Add and subtract integers

24. The highest location in a certain foreign country is 16,468 feet above sea level. The lowest point in the same country is 140 feet below sea level.
- a) Find the difference of the two elevations.
b) A city is 5,593 feet above sea level. Is this elevation closer to the highest point or the lowest point?
- [A] a) 16,328 feet b) lowest [B] a) 16,608 feet b) lowest [C] a) 16,608 feet b) highest [D] a) 16,328 feet b) highest
25. The temperature in Nome, Alaska was -24°F at 12:00 midnight. At 9:00 am the temperature raised to -15°F . What was the difference between the temperature at 12:00 midnight and 9:00 am?
- [A] 6 degrees [B] 9 degrees [C] 42 degrees [D] 39 degrees
26. Mark has \$142 in his checking account. He writes a check for \$110, makes a deposit of \$52, and then writes another check for \$92. Which amount below shows the balance of his account?
- [A] \$8 [B] - \$150 [C] - \$8 [D] \$292

Topic 16 - Patterns, Expressions, and Equations

Obj. 215 - Missing terms in number patterns

1. If the pattern indicated below is continued, what would be the total number of cubes in the 4th stage of the pattern?



$$1, \quad 1+4=5, \quad 1+4+9=14$$

- [A] 30 [B] 5 [C] 20 [D] 25
2. Look at the number pattern.

| | | | | |
|----|----|----|--|----|
| 10 | 12 | 14 | | 18 |
|----|----|----|--|----|

Find the number that goes in the empty box.

- [A] 17 [B] 15 [C] 21 [D] 16

3. What number should come next in the number pattern? 2, 5, 8, 11, . . .

- [A] 12 [B] 14 [C] 13 [D] 33

4. Which are the terms that correctly complete this table?

| | | | | | | | | | | |
|-----------------|---|----|----|---|----|----|----|---|----|----|
| Time (seconds) | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Distance (feet) | ? | 27 | 34 | ? | 48 | 55 | 62 | ? | 76 | 83 |

- [A]

| | | |
|----|----|----|
| 0 | 3 | 7 |
| 19 | 40 | 68 |

 [B]

| | | |
|----|----|----|
| 0 | 3 | 7 |
| 20 | 41 | 69 |

 [C]

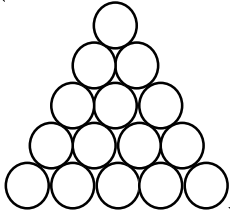
| | | |
|----|----|----|
| 0 | 3 | 7 |
| 18 | 42 | 68 |

 [D]

| | | |
|----|----|----|
| 0 | 3 | 7 |
| 21 | 40 | 70 |

Topic 16 - Patterns, Expressions, and Equations

5. A grocery clerk sets up a display of oranges in the form of a triangle using 10 oranges at the base and 1 at the top. (Only part of the display is shown below.)



How many oranges were used by the clerk to make the arrangement?

- [A] 65 [B] 45 [C] 75 [D] 55
6. Find the missing terms in the pattern below.
4, 6, 10, 16, 24, 34, _____, 60, 76, _____, 114
- [A] 47, 94 [B] 47, 95 [C] 46, 95 [D] 46, 94

Obj. 216 - Terms described in number patterns

7. The first row in a theater has 14 seats, the second row has 18 seats, and the third row has 22 seats. If this pattern continues, how many seats will the *eighth* row have?
- [A] 46 seats [B] 40 seats [C] 42 seats [D] 44 seats
8. Alexa collects foreign stamps, and tries to increase her collection each year. In her first year, she collected 4 stamps. The second year she collected 2 more stamps than the first year. The third year she collected 2 more stamps than the second, and so on. If this pattern continues, how many stamps will she collect in the tenth year?
- [A] 22 [B] 20 [C] 24 [D] 21
9. Tina is making up a banjo tune. She first played one E note, then four A notes, then four D notes, and finally, two G notes. If she repeats this pattern of notes, what note will the 28th note be?
- [A] A [B] D [C] E [D] G

Topic 16 - Patterns, Expressions, and Equations

Obj. 217 - Variable expressions to word phrases

10. Write the words that represent $12x$.

- [A] the sum of twelve and a number [B] a number divided by twelve
[C] twelve times a number [D] the quotient of a number and twelve

11. Write the words that represent each of the following.

a) $g + 12$ b) $11 - g$ c) $25g$ d) $\frac{g}{29}$

- [A] a) the product of twelve and a number
b) eleven subtracted from a number
c) twenty-five increased by a number
d) twenty-nine divided by a number

- [B] a) a number subtracted from eleven
b) a number increased by twelve
c) a number divided by twenty-nine
d) twenty-five times a number

- [C] a) a number increased by twelve
b) a number subtracted from eleven
c) twenty-five times a number
d) a number divided by twenty-nine

- [D] a) a number times twelve
b) the quotient of a number and eleven
c) twenty-five increased by a number
d) the difference of a number and twenty-nine

Obj. 218 - Equations to word sentences

12. Write the following in words:

$$11 + t = 14$$

- [A] a number decreased by fourteen is eleven
[B] eleven decreased by a number is fourteen
[C] eleven increased by a number is fourteen
[D] a number increased by fourteen is eleven

Topic 16 - Patterns, Expressions, and Equations

13. Write the following in words:

$$8 \times f = 36$$

- [A] eight times a number is thirty-six [B] thirty-six times a number is eight
[C] a number divided by eight is thirty-six
[D] eight divided by a number is thirty-six

14. Write the following in words:

$$k \div 43 = 11$$

- [A] eleven times a number is forty-three
[B] a number divided by forty-three is eleven
[C] a number times eleven is forty-three
[D] eleven divided by a number is forty-three

15. Write the following in words:

$$17 - b = 2$$

- [A] seventeen increased by a number is two
[B] seventeen decreased by a number is two
[C] a number increased by seventeen is two
[D] a number decreased by seventeen is two

Obj. 219 - Solve addition and subtraction equations

Solve:

16. $21 = m + 5$ [A] 16 [B] 26 [C] 105 [D] 15

17. $3 + b = -5$ [A] 3 [B] -9 [C] -16 [D] -8

18. $d - 2 = 4$ [A] -3 [B] -6 [C] 6 [D] 2



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