

1

Cumulative Practice



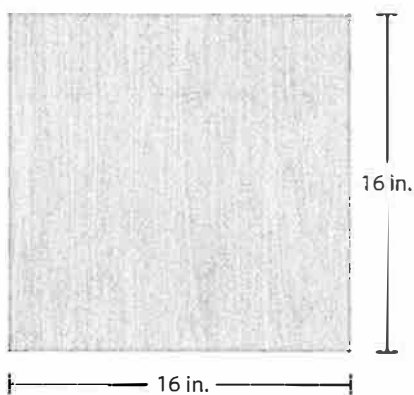
- A. What is the value of 8×135 ?

1. Which number is equivalent to the expression below?

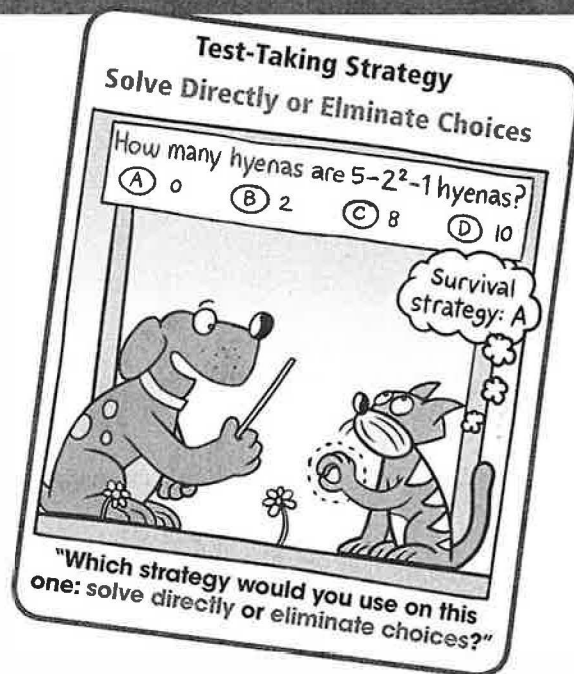
$$3 \cdot 2^3 - 8 \div 4$$

- A. 0 B. 4
C. 22 D. 214

2. The top of an end table is a square with a side length of 16 inches. What is the area of the tabletop?



- F. 16 in.^2 G. 32 in.^2
H. 64 in.^2 I. 256 in.^2
3. You are filling baskets using 18 green eggs, 36 red eggs, and 54 blue eggs. What is the greatest number of baskets that you can fill so that the baskets are identical and there are no eggs left over?
- A. 3 B. 6
C. 9 D. 18



- B. What is the value of $2^3 \cdot 3^2 \cdot 5$?



4. You hang the two strands of decorative lights shown below.



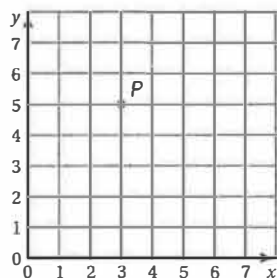
Strand 1: changes between red and blue every 15 seconds



Strand 2: changes between green and gold every 18 seconds

Both strands just changed color. After how many seconds will the strands change color at the same time again?

- F. 3 seconds
H. 90 seconds
G. 30 seconds
I. 270 seconds
5. Point P is plotted in the coordinate plane below.



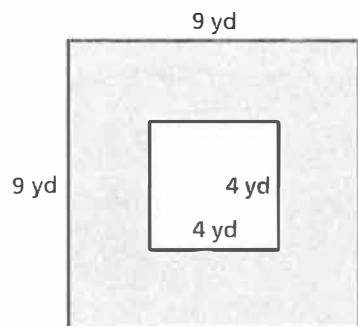
What are the coordinates of Point P ?

- A. (5, 3)
C. (3, 5)
B. (4, 3)
D. (3, 4)
6. What is the prime factorization of 1100?
- F. $2 \times 5 \times 11$
H. $4 \times 5^2 \times 11$
G. $2^2 \times 5^2 \times 11$
I. $2^2 \times 5 \times 55$

7. What is the least common multiple of 3, 8, and 10?

- A. 24 B. 30
C. 80 D. 120

8. What is the area of the shaded region of the figure below?



- F. 16 yd^2 G. 65 yd^2
H. 81 yd^2 I. 97 yd^2

9. Which expression represents a prime factorization?

- A. $4 \times 4 \times 7$ B. $2^2 \times 21 \times 23$
C. $3^4 \times 5 \times 7$ D. $5 \times 5 \times 9 \times 11$

C. Find the greatest common factor for each pair of numbers.



10 and 15

10 and 21

15 and 21

What can you conclude about the greatest common factor of 10, 15, and 21?
Explain your reasoning.

2

Cumulative Practice

10. Which number is equivalent to the expression below?

$$6 \times 8 - 2 \times 3^2$$

- A. 12
B. 30
C. 324
D. 414

- D. What is the greatest common factor of 48 and 120?



11. Which number is equivalent to $5.139 - 2.64$?

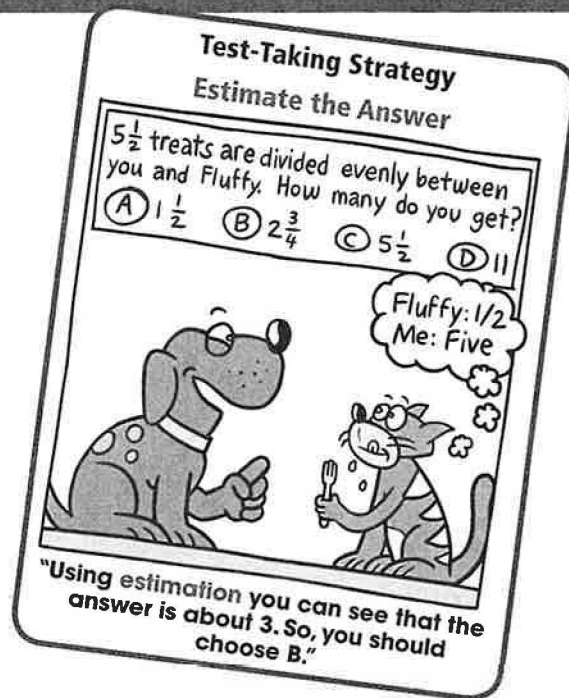
- F. 2.499
G. 2.599
H. 3.519
I. 3.599

12. Which number is equivalent to $\frac{4}{9} \div \frac{5}{7}$?

- A. $\frac{20}{63}$
B. $\frac{28}{45}$
C. $\frac{45}{28}$
D. $\frac{63}{20}$

13. You buy orange and black streamers for a party. The orange streamers are 9 feet long, and the black streamers are 12 feet long. What are the least numbers of streamers you should buy in order for the total length of the orange streamers to be the same as the total length of the black streamers?

- F. 36 orange streamers and 36 black streamers
G. 12 orange streamers and 9 black streamers
H. 3 orange streamers and 4 black streamers
I. 4 orange streamers and 3 black streamers



14. Which number is a prime factor of 572?

- A. 4 B. 7
C. 13 D. 22

15. Which number is equivalent to $7059 \div 301$?

- F. 23 G. $23\frac{136}{7059}$
H. $23\frac{136}{301}$ I. 136

16. A square wall tile has side lengths of 4 inches. You use 360 of the tiles. What is the area of the wall covered by the tiles?

- A. 16 in.^2 B. 360 in.^2
C. 1440 in.^2 D. 5760 in.^2

17. Which expression is equivalent to a perfect square?

- F. $3 + 2^2 \times 7$ G. $34 + 18 \div 3^2$
H. $(80 + 4) \div 4$ I. $3^2 + 6 \times 5 \div 3$

18. What is the missing denominator in the expression below?

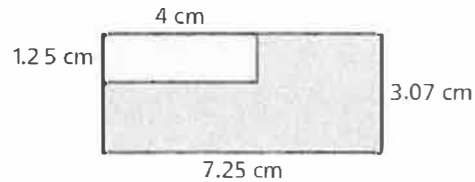
$$\frac{4}{8} \div \frac{2}{\quad} = \frac{3}{4}$$

- A. 1 B. 2
C. 3 D. 8

E. What is 4.56×0.7 ?



19. The area of the large rectangle is how many times the area of the small rectangle?

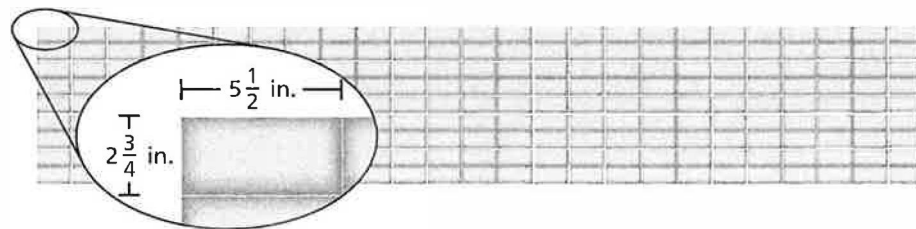


- F. 4.4515 G. 5.915
H. 17.2575 I. 111.2875

20. Which expression is equivalent to $5 \times 5 \times 5 \times 5$?

- A. 5×4 B. 4^5
C. 5^4 D. 5^5

- F. A walkway is built using identical concrete blocks.



Part A How much longer, in inches, is the length of the walkway than the width of the walkway? Show your work and explain your reasoning.

Part B How many times longer is the length of the walkway than the width of the walkway? Show your work and explain your reasoning.

21. A meteoroid moving at a constant speed travels $6\frac{7}{8}$ miles in 30 seconds. How far does the meteoroid travel in 1 second?

- F. $\frac{1}{5}$ mile G. $\frac{11}{48}$ mile
H. $2\frac{7}{24}$ miles I. $206\frac{1}{4}$ miles

3

Cumulative Practice

22. Which number is equivalent to $\frac{2}{9} \div \frac{4}{5}$?

A. $\frac{8}{45}$

B. $\frac{5}{18}$

C. $\frac{7}{13}$

D. $3\frac{3}{5}$



G. Your speed while waterskiing is 22 miles per hour. How fast are you traveling in kilometers per hour? Round your answer to the nearest hundredth.

23. Which number is equivalent to the expression below?

$$2 \cdot 4^2 + 3(6 \div 2)$$

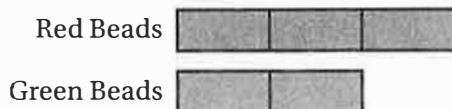
F. 25

G. 41

H. 73

I. 105

24. The tape diagram models the ratio of red beads to green beads in a bracelet. The bracelet uses 12 red beads. How many green beads are in the bracelet?



A. 4 green beads

B. 8 green beads

C. 12 green beads

D. 20 green beads

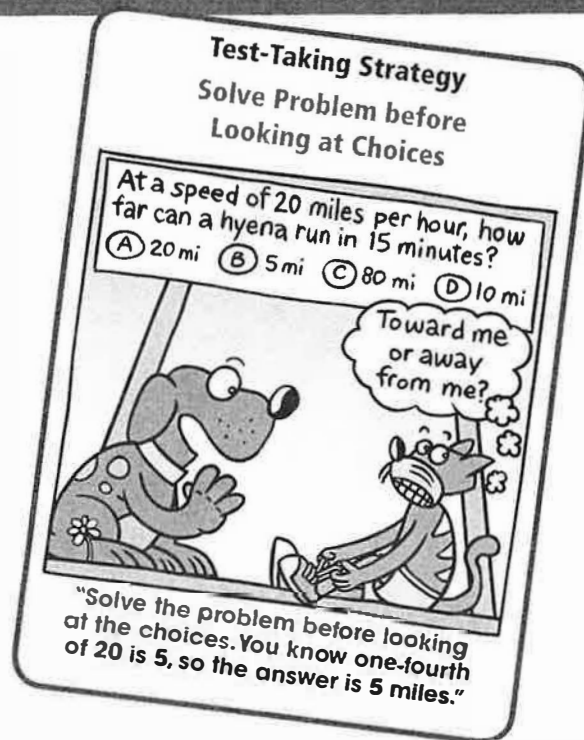
25. What is the least common multiple of 8, 12, and 20?

F. 24

G. 40

H. 60

I. 120



26. Which number is equivalent to $2.34 \times 1.08 \times 5.6$?

A. 12.787632

B. 14.15232

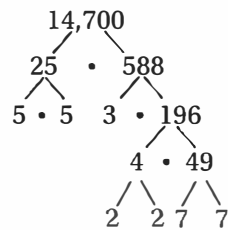
C. 23.5872

D. 14,152.32

H. The school store sells 4 pencils for \$0.50. At this rate, what is the cost (in dollars) of 10 pencils?



27. A factor tree for 14,700 is shown. Which factor of 14,700 is *not* a perfect square?



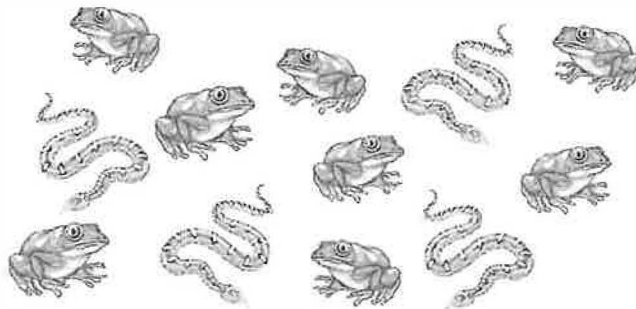
F. 25

G. 49

H. 196

I. 588

28. Which of the following is a ratio of frogs to snakes?



A. 4 : 8

B. 8 : 12

C. 8 : 4

D. 4 : 12

29. Which expression is equivalent to 3^5 ?

F. $3 \times 3 \times 3 \times 3 \times 3$

G. 3×5

H. $5 \times 5 \times 5$

I. $3 + 3 + 3 + 3 + 3$

30. Which is the correct order of operations when evaluating $5 + 4 \times 2^3$?

k. Add 5 and 4.

l. Add 5 and 32.

m. Evaluate 2^3 .

n. Multiply 4 and 2.

p. Multiply 4 and 8.

q. Add 5 and 512.

r. Multiply 9 and 8.

s. Evaluate 8^3 .

t. Multiply 9 and 2.

u. Evaluate 18^3 .

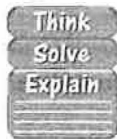
A. k, t, u

B. n, s, q

C. m, k, r

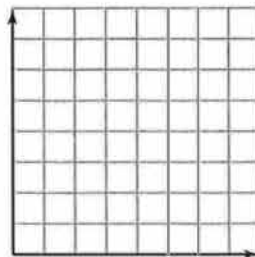
D. m, p, l

I. The ratio of scrambled eggs to hard-boiled eggs served at a restaurant is 6 : 2.



Part A Make a ratio table showing three possible combinations of scrambled eggs and hard-boiled eggs.

Part B Represent the ratio relationship using a graph.



Part C Use the graph to find the number of hard-boiled eggs served when the restaurant serves 15 scrambled eggs.

4

Cumulative Practice

31. How many pints are in 8 quarts?

- A. 2 pints B. 4 pints
C. 16 pints D. 32 pints

32. Which fraction is *not* equivalent to 25%?

- F. $\frac{1}{4}$ G. $\frac{2}{5}$
H. $\frac{5}{20}$ I. $\frac{25}{100}$

J. What is the missing value in the ratio table?



Pairs of Shoes	7		56
Pairs of Boots	2	8	16

33. Your friend was finding the percent of a number in the box below.

25% of 24 is what number?

$$25\% \text{ of } 24 = 24 \div \frac{1}{4}$$

$$= 96$$

What should your friend do to correct the error?

- A. Divide 24 by 25. B. Divide $\frac{1}{4}$ by 24.
C. Multiply 24 by 25. D. Multiply 24 by $\frac{1}{4}$.

34. Which percent is equivalent to $\frac{4}{5}$?

- F. 20% G. 45%
H. 80% I. 125%



35. Which pair of numbers does *not* have a least common multiple less than 100?

A. 10, 15

B. 12, 16

C. 16, 18

D. 18, 24

36. You are comparing the costs of buying bottles of water at the supermarket. Which of the following has the least cost per liter?

F. 6 one-liter bottles for \$1.80

G. 1 two-liter bottle for \$0.65

H. 8 half-liter bottles for \$1.50

I. 12 half-liter bottles for \$1.98

K. What is 75% of 36?



37. Which number is equivalent to $\frac{5}{12} \times \frac{4}{9}$?

A. $\frac{5}{27}$

B. $\frac{3}{7}$

C. $\frac{15}{16}$

D. $\frac{5}{3}$

38. Which list of numbers is in order from least to greatest?

F. $0.8, \frac{5}{8}, 70\%, 0.09$

G. $\frac{5}{8}, 70\%, 0.8, 0.09$

H. $0.09, \frac{5}{8}, 0.8, 70\%$

I. $0.09, \frac{5}{8}, 70\%, 0.8$

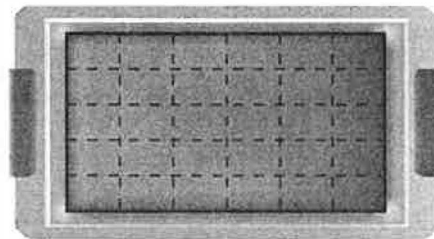
39. Which number is equivalent to $1.32 \div 0.006$?

- A. 2.2 B. 22
C. 220 D. 2200

40. Which ratio is equivalent to 4 : 14?

- F. 2 : 12 G. 10 : 35
H. 18 : 28 I. 8 : 18

L. For a party, you make a gelatin dessert in a rectangular pan and cut the dessert into equal-sized pieces, as shown below.



The dessert consists of 5 layers of equal height. Each layer is a different flavor, as shown below by a side view of the pan.



Your guests eat $\frac{3}{5}$ of the pieces of the dessert.

Part A Write the amount of cherry gelatin that your guests eat as a fraction of the total dessert. Justify your answer.

Part B Write the amount of cherry gelatin that your guests eat as a percent of the total dessert. Justify your answer.

5

Cumulative Practice

41. The student council is organizing a school fair. Council members are making signs to show the prices for admission and for each game a person can play.

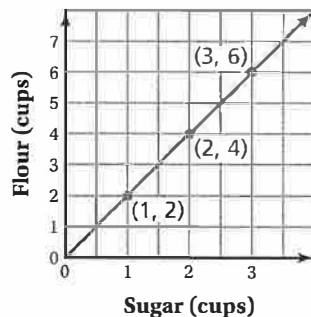
SCHOOL FAIR

Admission	\$2.00
Price per game	\$0.25

Let x represent the number of games. Which expression can you use to determine the total amount (in dollars) a person pays for admission and playing x games?

- A. 2.25 B. $2.25x$
C. $2 + 0.25x$ D. $2x + 0.25$

42. Which ratio relationship is represented in the graph?

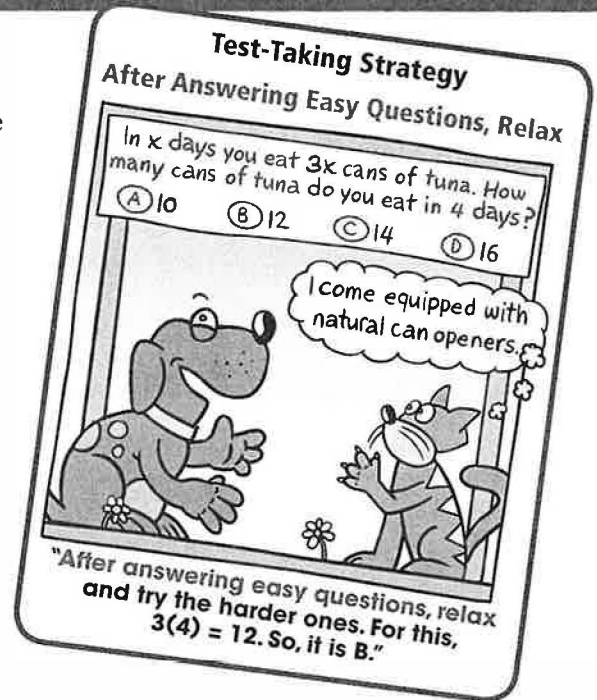


- F. 2 cups of flour for every $\frac{1}{2}$ cup of sugar
G. 6 cups of flour for every 3 cups of sugar
H. 1 cup of flour for every 4 cups of sugar
I. $\frac{1}{2}$ cup of flour for every 1 cup of sugar



- M. At a used bookstore, you can purchase two types of books.

You can use the expression $3h + 2p$ to find the total cost (in dollars) for h hardcover books and p paperback books. What is the total cost (in dollars) for 6 hardcover books and 4 paperback books?



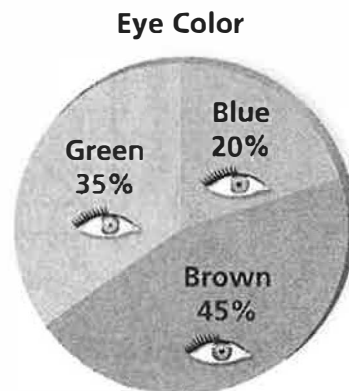
43. Your friend divided two decimal numbers. Her work is shown in the box below. What should your friend change in order to divide the two decimal numbers correctly?

$$0.07 \overline{)14.56} \rightarrow 7 \overline{)14.56} \quad \begin{array}{r} 2.08 \\ \end{array}$$

- A. Rewrite the problem as $0.07 \overline{)0.1456}$.
 B. Rewrite the problem as $0.07 \overline{)1456}$.
 C. Rewrite the problem as $7 \overline{)0.1456}$.
 D. Rewrite the problem as $7 \overline{)1456}$.
44. What is the value of $4.391 + 5.954$?
- F. 9.12145 G. 9.245
 H. 9.345 I. 10.345

45. The circle graph shows the eye color of students in a sixth-grade class. Nine students in the class have brown eyes. How many students are in the class?

- A. 4 students
 B. 18 students
 C. 20 students
 D. 405 students



- N. Properties of Addition and Multiplication are used to simplify an expression.



$$\begin{aligned} 36 \cdot 23 + 33 \cdot 64 &= 36 \cdot 23 + 64 \cdot 33 \\ &= 36 \cdot 23 + 64 \cdot (23 + 10) \\ &= 36 \cdot 23 + 64 \cdot 23 + 64 \cdot 10 \\ &= x \cdot 23 + 64 \cdot 10 \end{aligned}$$

What number belongs in place of the x ?

46. What is the prime factorization of 1350?

F. $10 \cdot 135$

G. $2 \cdot 3 \cdot 5$

H. $6 \cdot 225$

I. $2 \cdot 3^3 \cdot 5^2$

47. A horse gallops at a speed of 44 feet per second. What is the speed of the horse in miles per hour?

A. $\frac{1}{2}$ mile per hour

B. 30 miles per hour

C. $64 \frac{8}{15}$ miles per hour

D. 158,400 miles per hour

48. Which equation correctly demonstrates the Distributive Property?

F. $a(b + c) = ab + c$

G. $a(b + c) = ab + ac$

H. $a + (b + c) = (a + b) + (a + c)$

I. $a + (b + c) = (a + b) \cdot (a + c)$

49. Which number is equivalent to $2\frac{4}{5} \cdot 1\frac{2}{7}$?

A. $2\frac{8}{45}$

B. $2\frac{8}{35}$

C. $3\frac{3}{5}$

D. $4\frac{3}{35}$

50. Which pair of numbers does *not* have a least common multiple of 24?

F. 2, 12

G. 3, 8

H. 6, 8

I. 12, 24

O. Use the Properties of Multiplication to simplify the expression in an efficient way. Show your work and explain how you used the Properties of Multiplication.



$$(25 \times 18) \times 4$$

51. Which number is *not* a perfect square?

A. 64

B. 81

C. 96

D. 100

6

Cumulative Practice

52. You buy roses at a flower shop for \$3 each. How many roses can you buy with \$27?

A. 9
B. 10
C. 24
D. 81

53. You are making identical fruit baskets using 16 apples, 24 pears, and 32 bananas. What is the greatest number of baskets you can make using all of the fruit?

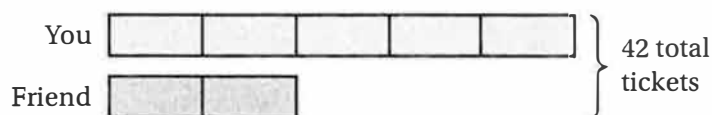
F. 2
G. 4
H. 8
I. 16

54. Which equation represents the word sentence?

The sum of 18 and 5 is equal to 9 less than a number y .

A. $18 - 5 = 9 - y$
B. $18 + 5 = 9 - y$
C. $18 + 5 = y - 9$
D. $18 - 5 = y - 9$

55. The tape diagram shows the ratio of tickets sold by you and your friend. How many more tickets did you sell than your friend?

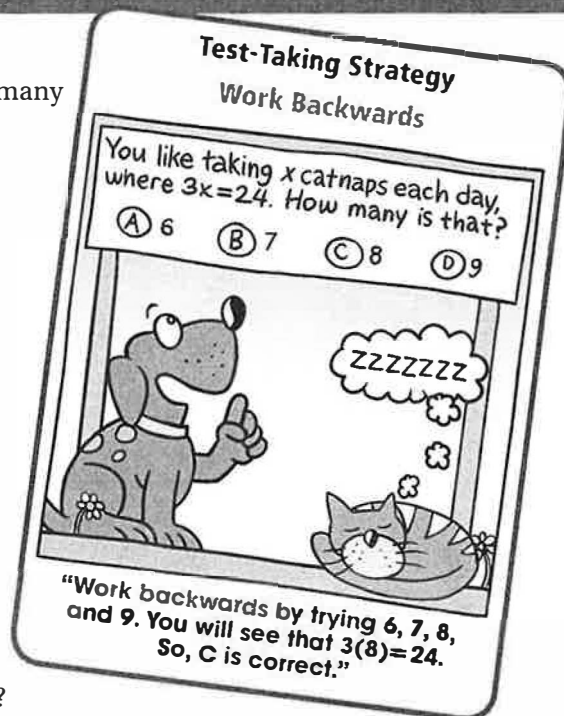


F. 6
G. 12
H. 18
I. 30

- P. What is the value of x that makes the equation true?



$$59 + x = 112$$



56. The steps your friend took to divide two mixed numbers are shown.

$$\begin{aligned} 3\frac{3}{5} \div 1\frac{1}{2} &= \frac{18}{5} \times \frac{3}{2} \\ &= \frac{27}{5} \\ &= 5\frac{2}{5} \end{aligned}$$

What should your friend change in order to divide the two mixed numbers correctly?

- A. Find a common denominator of 5 and 2.
 - B. Multiply by the reciprocal of $\frac{18}{5}$.
 - C. Multiply by the reciprocal of $\frac{3}{2}$.
 - D. Rename $3\frac{3}{5}$ as $2\frac{8}{5}$.
57. A company ordering parts receives a charge of \$25 for shipping and handling plus \$20 per part. Which equation represents the cost c (in dollars) of ordering p parts?
- F. $c = 25 + 20p$
 - G. $c = 20 + 25p$
 - H. $p = 25 + 20c$
 - I. $p = 20 + 25c$
58. Which property is illustrated by the statement?

$$5(a + 6) = 5(a) + 5(6)$$

- A. Associative Property of Multiplication
- B. Commutative Property of Multiplication
- C. Commutative Property of Addition
- D. Distributive Property

- Q. What is the value of the expression?



$$46.8 \div 0.156$$

Cumulative Practice

62. A cruise ship is carrying a total of 4971 people. Each lifeboat can hold a maximum of 150 people. What is the minimum number of lifeboats needed to evacuate everyone on the cruise ship?

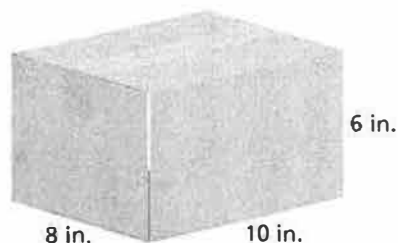
A. 33 lifeboats B. 34 lifeboats
C. 54 lifeboats D. 332 lifeboats

63. Which number is equivalent to the expression?

$$3 \cdot 4^2 + 6 \div 2$$

F. 27 G. 33
H. 51 I. 75

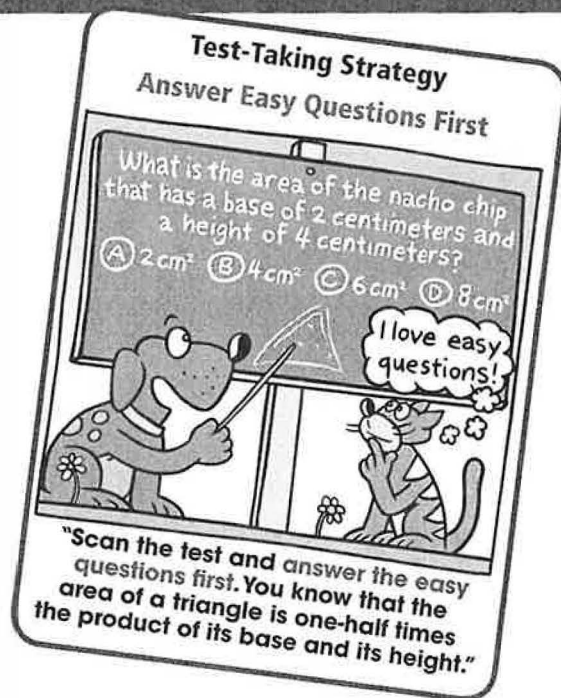
64. What is the volume of the package?



A. 240 in.^3 B. 376 in.^3
C. 480 in.^3 D. 960 in.^3

65. A housing community started with 60 homes. In each of the following years, 8 more homes were built. Let y represent the number of years that have passed since the first year, and let n represent the number of homes. Which equation describes the relationship between n and y ?

F. $n = 8y + 60$ G. $n = 68y$
H. $n = 60y + 8$ I. $n = 60 + 8 + y$

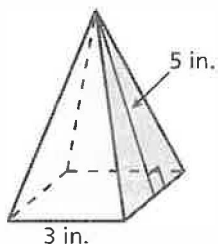


- S. What is the value of m that makes the equation true?



$$4m = 6$$

66. What is the surface area of the square pyramid?



- A. 30 in.^2 B. 31.5 in.^2
C. 39 in.^2 D. 69 in.^2

- T. A wooden box has a length of 12 inches, a width of 6 inches, and a height of 8 inches.



Part A Draw and label a rectangular prism with the dimensions of the wooden box.

Part B What is the surface area, in square inches, of the wooden box? Show your work.

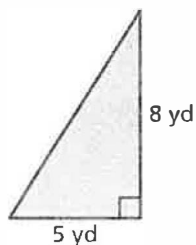
Part C You have a two-fluid ounce sample of wood stain that covers 900 square inches. Is this enough to give the entire box two coats of stain? Show your work and explain your reasoning.

67. On Saturday, you earned \$35 mowing lawns. This was x dollars more than you earned on Thursday. Which expression represents the amount, in dollars, you earned mowing lawns on Thursday?

- F. $35x$ G. $x + 35$
H. $x - 35$ I. $35 - x$



U. What is the area, in square yards, of the triangle?



68. Which expression is equivalent to $\frac{12}{35}$?

A. $\frac{5}{6} \div \frac{2}{7}$

B. $\frac{2}{7} \div \frac{6}{5}$

C. $\frac{2}{7} \div \frac{5}{6}$

D. $\frac{5}{6} \div \frac{7}{2}$

69. The description below represents the area of which polygon?

“one-half the product of its height and the sum of its bases”

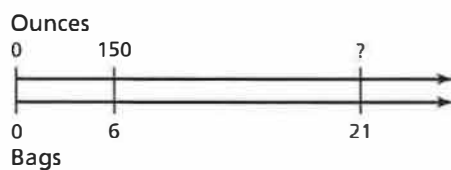
F. rectangle

G. parallelogram

H. trapezoid

I. triangle

70. What is the missing quantity in the double number line?



A. 25 ounces

B. 165 ounces

C. 525 ounces

D. 600 ounces

8

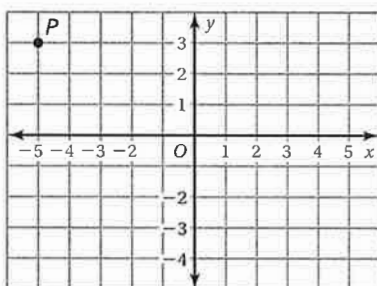
Cumulative Practice

71. What is the value of the expression when $a = 6$, $b = 5$, and $c = 4$?

$$8a - 3c + 5b$$

- A. 11 B. 53
C. 61 D. 107

72. Point P is plotted in the coordinate plane.



What are the coordinates of point P ?

- F. $(-5, -3)$ G. $(-5, 3)$
H. $(-3, -5)$ I. $(3, -5)$

- V. What is the value of a that makes the equation true?



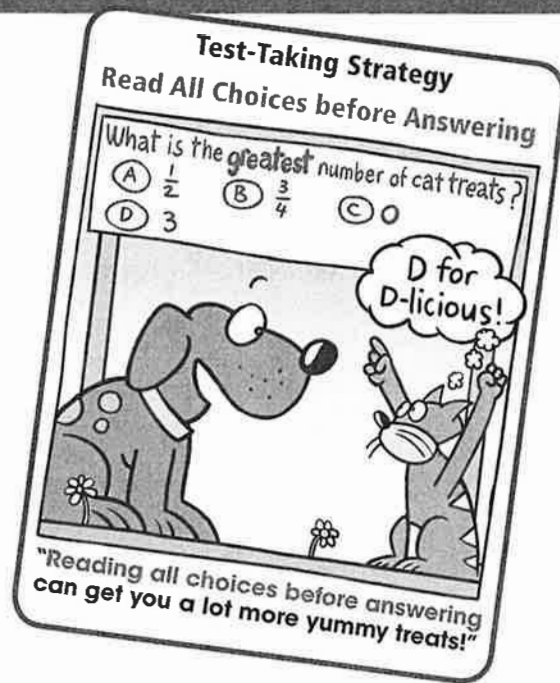
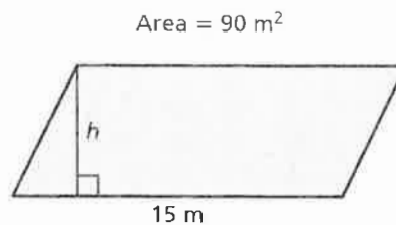
$$a + 6 = 18$$

73. Which list of values is in order from least to greatest?

- A. $2, |-3|, |4|, -6$ B. $-6, |4|, 2, |-3|$
C. $-6, |-3|, 2, |4|$ D. $-6, 2, |-3|, |4|$

74. What is the height of the parallelogram?

- F. 6 meters
G. 12 meters
H. 75 meters
I. 1350 meters

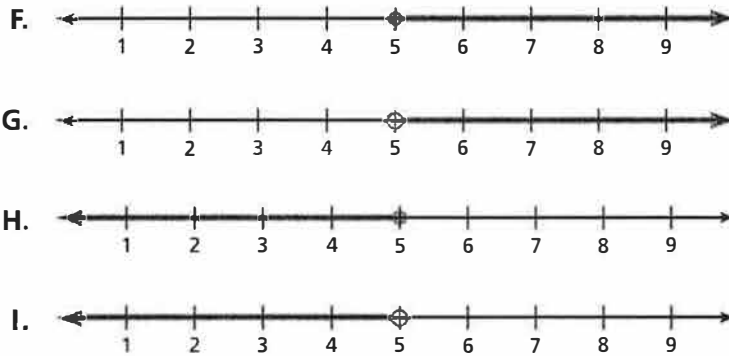


75. Which property is illustrated by the statement?

$$4 + (6 + n) = (4 + 6) + n$$

- A. Associative Property of Addition B. Commutative Property of Addition
C. Associative Property of Multiplication D. Distributive Property

76. Which number line shows the graph of $x \geq 5$?

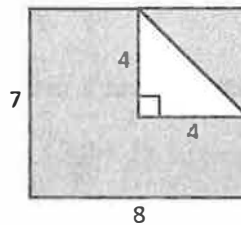


77. Which number is the greatest?

- A. $\frac{7}{8}$ B. 0.86
C. $\frac{22}{25}$ D. 85%

78. What is the area of the shaded region?

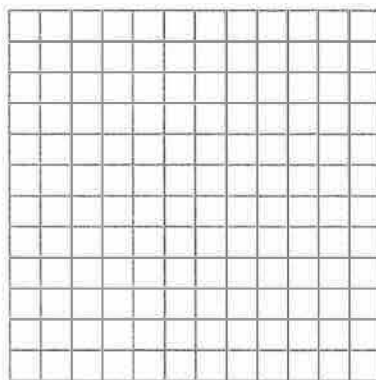
- F. 23 units² G. 40 units²
H. 48 units² I. 60 units²



W. Write 23.5% as a decimal.



X. Use grid paper to complete the following.



Part A Draw an x -axis and a y -axis of a coordinate plane. Then plot and label the point $(2, -3)$.

Part B Plot and label *four* points that are 3 units away from $(2, -3)$.

79. What is the perimeter of the rectangle with the vertices shown below?

$$A(-4, -1), B(-4, 7), C(1, 7), D(1, -1)$$

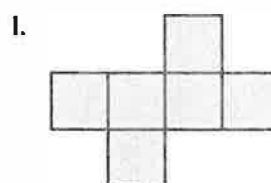
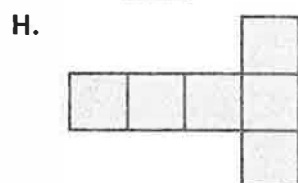
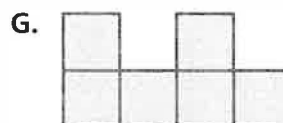
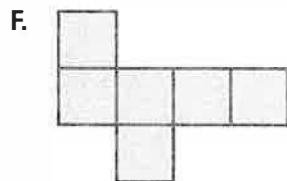
A. 8 units

B. 13 units

C. 26 units

D. 40 units

80. Which net does *not* form a cube?



81. Which value of y makes the equation true?

$$\frac{3}{4}y = 12$$

A. 9

B. $11\frac{1}{4}$

C. $12\frac{3}{4}$

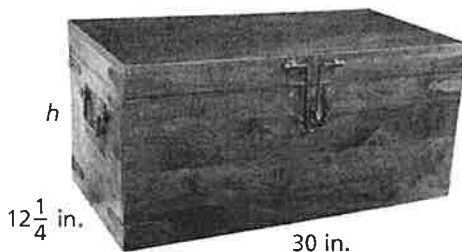
D. 16

82. Which statement can be represented by a negative integer?
- A. The temperature rises 15 degrees.
 - B. A hot-air balloon ascends 450 yards.
 - C. You earn \$50 completing chores.
 - D. A submarine submerges 260 feet.

Y. What is the height h (in inches) of the prism?



$$\text{Volume} = 5880 \text{ in.}^3$$



83. Which is the solution of the inequality $\frac{2}{3}x < 6$?

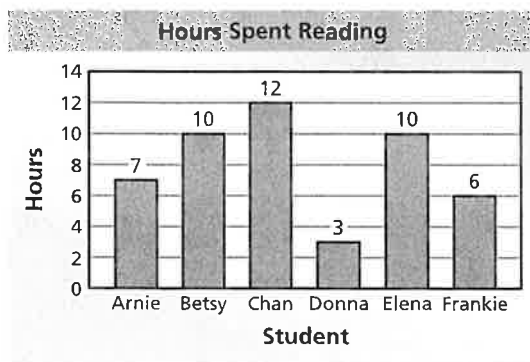
F. $x < 4$

G. $x < 5\frac{1}{3}$

H. $x < 6\frac{2}{3}$

I. $x < 9$

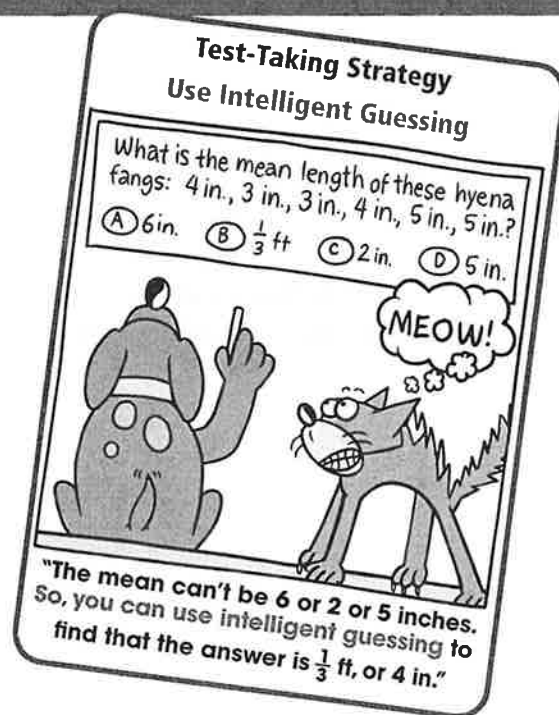
84. The number of hours that each of six students spent reading last week is shown in the bar graph.



For the data in the bar graph, which measure is the *least*?

- A. mean
- C. mode

- B. median
- D. range



85. Which list of numbers is in order from least to greatest?

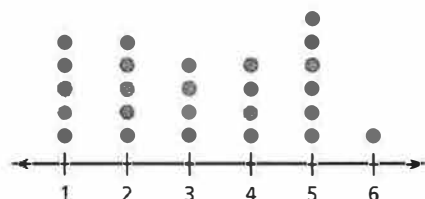
F. $-5.41, -3.6, -3.2, -3.06, -1$

G. $-1, -3.06, -3.2, -3.6, -5.41$

H. $-5.41, -3.06, -3.2, -3.6, -1$

I. $-1, -3.6, -3.2, -3.06, -5.41$

86. What is the mean absolute deviation of the data shown in the dot plot, rounded to the nearest tenth?



A. 1.4

B. 3

C. 3.2

D. 5

87. A family wants to buy tickets to a theme park. There are separate ticket prices for adults and children.

Roller-Coaster World!

Tickets: \$30 per adult
\$20 per child

Which expression represents the total cost (in dollars) for a adult tickets and c child tickets?

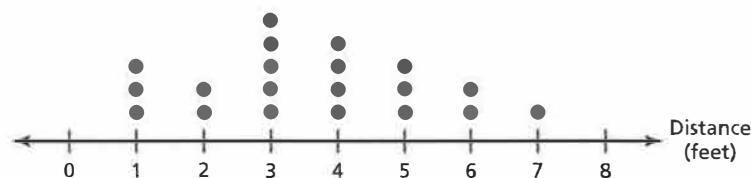
F. $600(a + c)$

G. $50(a \times c)$

H. $30a + 20c$

I. $30a \times 20c$

Z. The dot plot shows the leap distances (in feet) of a tree frog. How many leaps were recorded?



88. What is the value of the expression when $a = 6$ and $b = 14$?

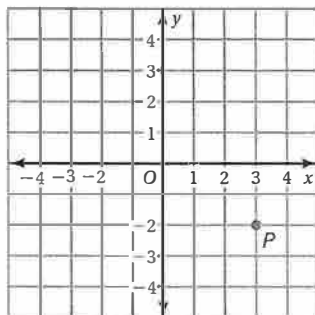
$$0.8a + 0.02b$$

- A. 0.4828 B. 0.8814
C. 5.08 D. 16.4

89. Which property was *not* used to simplify the expression?

$$\begin{aligned} 0.3 \times y + y \times 0.7 &= y \times 0.3 + y \times 0.7 \\ &= y \times (0.3 + 0.7) \\ &= y \times 1 \\ &= y \end{aligned}$$

- F. Distributive Property
G. Associative Property of Addition
H. Multiplication Property of One
I. Commutative Property of Multiplication
90. What are the coordinates of Point P ?



- A. $(-3, -2)$ B. $(3, -2)$
C. $(-2, -3)$ D. $(-2, 3)$

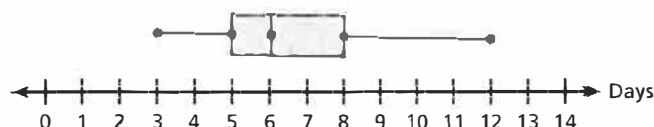
- AA. Create a data set with 5 numbers that has the following measures.



- a mean of 7
- a median of 9

Explain how you created your data set.

91. Research scientists are measuring the numbers of days lettuce seeds take to germinate. In a study, 500 seeds were planted. Of these, 473 seeds germinated. The box-and-whisker plot summarizes the numbers of days it took the seeds to germinate. What can you conclude from the box-and-whisker plot?



- A. The median number of days for the seeds to germinate is 12.
- B. 50% of the seeds took more than 8 days to germinate.
- C. 50% of the seeds took less than 5 days to germinate.
- D. The median number of days for the seeds to germinate was 6.

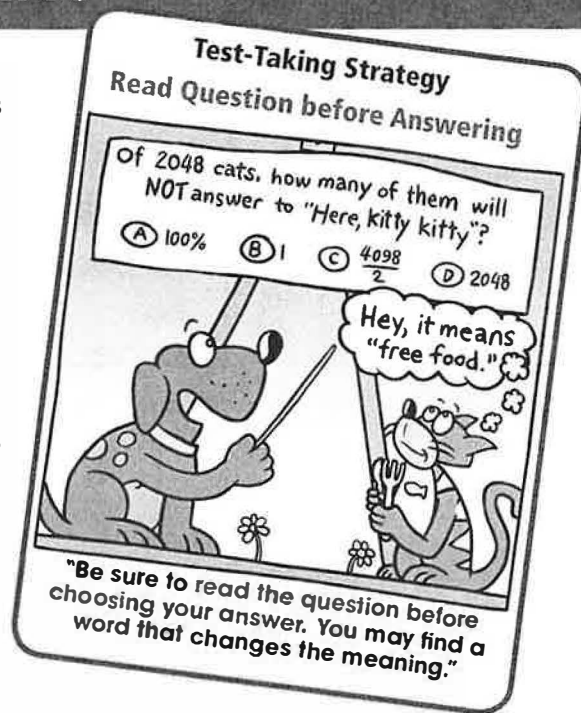
92. Find the interquartile range of the data.

15 7 5 8 9 20 12 7 11 7 15

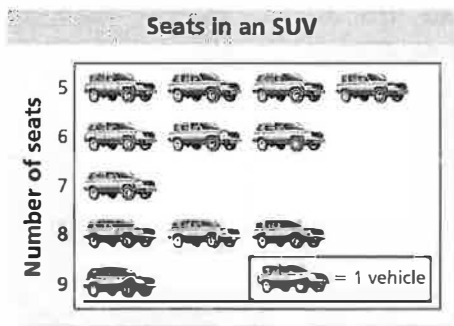
- F. 8
- G. 11
- H. 12
- I. 20

93. There are seven different integers in a set. When they are listed from least to greatest, the middle integer is -1 . Which statement below must be true?

- A. There are three negative integers in the set.
- B. There are three positive integers in the set.
- C. There are four negative integers in the set.
- D. The integer in the set after -1 is positive.



94. What is the mean number of seats?



- F. 2.4 seats
G. 5 seats
H. 6.5 seats
I. 7 seats
95. On Wednesday, a town received 17 millimeters of rain. This was x millimeters more rain than the town received on Tuesday. Which expression represents the amount of rain, in millimeters, the town received on Tuesday?

- A. $17x$
B. $17 - x$
C. $x + 17$
D. $x - 17$

- AB.** One of the leaves is missing in the stem-and-leaf plot.



The median of the data set represented by the stem-and-leaf plot is 38. What is the value of the missing leaf?

Stem	Leaf
1	3 4
2	
3	4 5 7 7 7 ? 9
4	0 1 1 4
5	0 2 3

Key: 1|4 = 14

96. Which property is demonstrated by the equation?

$$723 + (y + 277) = 723 + (277 + y)$$

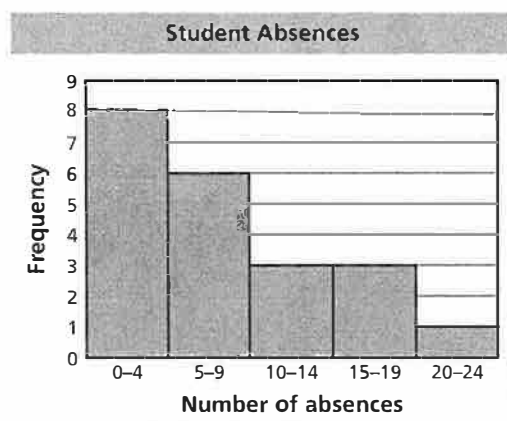
- F. Associative Property of Addition
G. Commutative Property of Addition
H. Distributive Property
I. Addition Property of Zero

97. A student took five tests and had a mean score of 92. Her scores on the first 4 tests were 90, 96, 86, and 92. What was her score on the fifth test?

A. 92 B. 93
C. 96 D. 98



- AC. At the end of the school year, your teacher counted the number of absences for each student. The results are shown in the histogram. How many students had fewer than 10 absences?



- AD. The ages of the 16 members of a camera club are listed below.

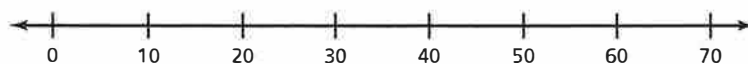


40, 22, 24, 58, 30, 31, 37, 25, 62, 40, 39, 37, 28, 28, 51, 44

Part A Order the ages from youngest to oldest.

Part B Find the median of the ages.

Part C Make a box-and-whisker plot for the ages.



A

Cumulative Practice

98. A football team gains 2 yards on the first play, loses 5 yards on the second play, loses 3 yards on the third play, and gains 4 yards on the fourth play. What is the team's total gain or loss?

A. a gain of 14 yards B. a gain of 2 yards
C. a loss of 2 yards D. a loss of 14 yards

99. Which expression is *not* equal to 0?

F. $5 - 5$ G. $-7 + 7$
H. $6 - (-6)$ I. $-8 - (-8)$

100. What is the value of the expression?

$$|-2 - (-2.5)|$$

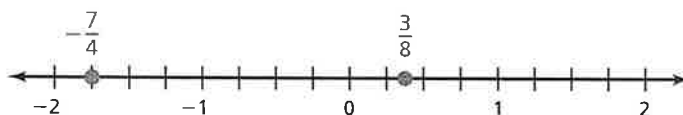
A. -4.5 B. -0.5
C. 0.5 D. 4.5

- AE. What is the value of the expression?

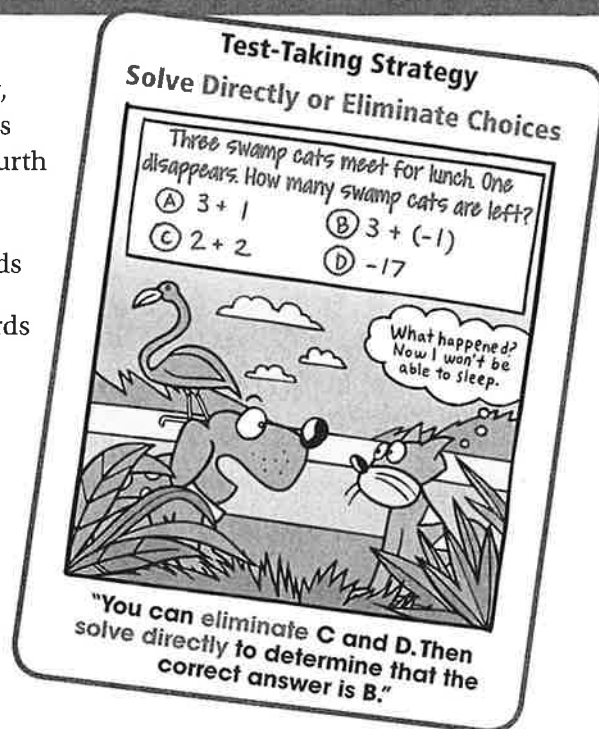


$$17 - (-8)$$

101. What is the distance between the two numbers on the number line?



F. $-2\frac{1}{8}$ G. $-1\frac{3}{8}$
H. $1\frac{3}{8}$ I. $2\frac{1}{8}$



102. What is the value of the expression when $a = 8$, $b = 3$, and $c = 6$?

$$|a^2 - 2ac + 5b|$$

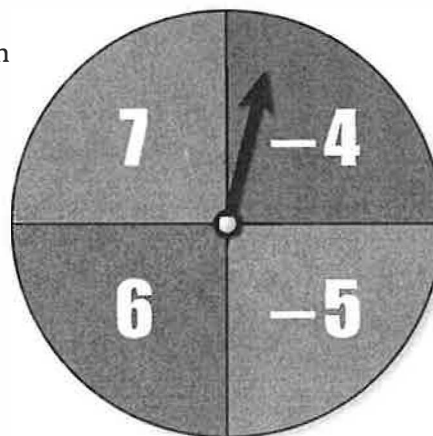
- A. -65
B. -17
C. 17
D. 65

- AF. What is the value of the expression?



$$-9.74 + (-2.23)$$

103. Four friends are playing a game using the spinner shown. Each friend starts with a score of 0 and then spins four times. When you spin blue, you add the number to your score. When you spin red, you subtract the number from your score. The highest score after four spins wins. Each friend's spins are shown. Which spins belong to the winner?



- F. 6, 7, 7, 6
G. -4, -4, 7, -5
H. 6, -5, -4, 7
I. -5, 6, -5, 6

104. What number belongs in the box to make the equation true?

$$3\frac{1}{2} \div 5\frac{2}{3} = \frac{7}{2} \times \boxed{}$$

- A. $\frac{3}{17}$
B. $\frac{3}{2}$
C. $\frac{17}{3}$
D. $\frac{13}{2}$

105. What is the value of the expression?

$$\frac{5.2 - 2.25}{0.05}$$

- F. -346
G. 0.59
H. 5.9
I. 59

106. You leave school and walk 1.237 miles west. Your friend leaves school and walks 0.56 mile east. How far apart are you and your friend?

A. 0.677 mile
B. 0.69272 mile
C. 1.293 miles
D. 1.797 miles

107. Which property does the equation represent?

$$-80 + 30 + (-30) = -80 + [30 + (-30)]$$

F. Commutative Property of Addition
G. Associative Property of Addition
H. Additive Inverse Property
I. Addition Property of Zero

108. The values of which two points have the greatest sum?



A. R and S
B. R and U
C. S and T
D. T and U

- AG. Consider the number line shown.

Think
Solve
Explain



Part A Use the number line to explain how to add -2 and -3 .

Part B Use the number line to explain how to subtract 5 from 2.

109. Which expression represents a *negative* value?

F. $2 - |-7 + 3|$
G. $|-12 + 9|$
H. $|5| + |11|$
I. $|8 - 14|$

B Cumulative Practice

110. When José and Sean were each 5 years old, José was $1\frac{1}{2}$ inches taller than Sean. Then José grew at an average rate of $2\frac{3}{4}$ inches per year until he was 13 years old. José was 63 inches tall when he was 13 years old. How tall was Sean when he was 5 years old?

- A. $39\frac{1}{2}$ in. B. $42\frac{1}{2}$ in.
C. $44\frac{3}{4}$ in. D. $47\frac{3}{4}$ in.

111. What is the value of $-5 + (-7)$?

- F. -12 G. -2
H. 2 I. 12

- AH. What is the value of the expression?



$$-\frac{9}{16} + \frac{9}{8}$$

112. What is the value of $|a^2 - 2ac + 5b|$ when $a = -2$, $b = 3$, and $c = -5$?

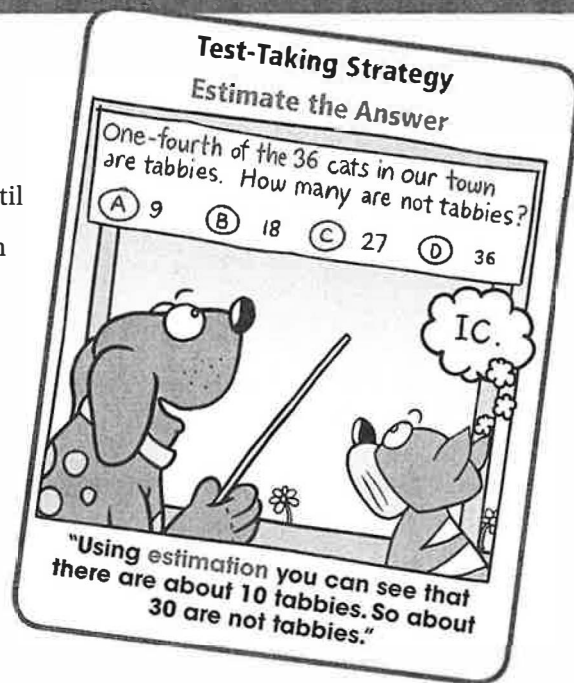
- A. -9 B. -1
C. 1 D. 9

113. Your friend evaluated the expression.

$$\begin{aligned} 2 - 3 - (-5) &= -5 - (-5) \\ &= -5 + 5 \\ &= 0 \end{aligned}$$

What should your friend do to correct the error that he made?

- F. Subtract 5 from -5 instead of adding.
G. Rewrite $2 - 3$ as -1 .
H. Subtract -5 from 3 before subtracting 3 from 2.
I. Rewrite $-5 + 5$ as -10 .



114. What is the value of $-1\frac{1}{2} - \left(-1\frac{3}{4}\right)$?

A. $-3\frac{1}{4}$

B. $\frac{1}{4}$

C. $\frac{6}{7}$

D. $2\frac{5}{8}$

115. What is the value of the expression when $q = -2$, $r = -12$, and $s = 8$?

$$\frac{-q^2 - r}{s}$$

F. -2

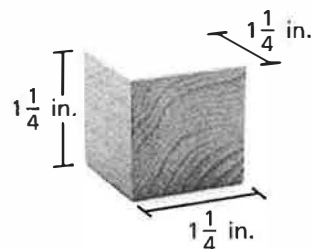
G. -1

H. 1

I. 2



A1. You are stacking wooden blocks with the dimensions shown. How many blocks do you need to stack vertically to build a block tower that is $7\frac{1}{2}$ inches tall?



116. Your friend evaluated an expression.

$$\begin{aligned} -4\frac{3}{4} + 2\frac{1}{5} &= -\frac{19}{4} + \frac{11}{5} \\ &= \frac{95}{20} + \frac{44}{20} \\ &= \frac{-95 + 44}{20} \\ &= \frac{-139}{20} \\ &= -6\frac{19}{20} \end{aligned}$$

What should your friend do to correct the error that she made?

A. Rewrite $-\frac{19}{4} + \frac{11}{5}$ as $\frac{-19 + 11}{4 + 5}$.

B. Rewrite $-95 + 44$ as -51 .

C. Rewrite $\frac{-95 + 44}{20}$ as $\frac{51}{20}$.

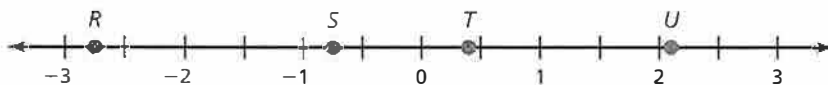
D. Rewrite $-4\frac{3}{4}$ as $-\frac{13}{4}$.

F. $-xy$

G. xy

H. $x - y$

I. $-x - y$



Part D Choose the two points whose values have the greatest quotient. Approximate this quotient. Explain your reasoning.

$$\underline{-0.4} + 0.8 = -1.2$$

A. -1 **B.** -0.2
C. 0.2 **D.** 1

F. $-x + y$ **G.** $y - x$
H. $x - y$ **I.** $-x - y$

A. $2\frac{1}{4}\text{ in.}^2$ **B.** $2\frac{1}{2}\text{ in.}^2$
C. $4\frac{1}{2}\text{ in.}^2$ **D.** 5 in.^2

F. 0.2 G. $0.\overline{2}$
H. 0.29 I. 4.5

C

Cumulative Practice

122. What is the simplified form of the expression?

$$3.7x - 5 - 2.3x$$

- A. $-3.6x$
- B. $6x - 5$
- C. $1.4x - 5$
- D. $3.7x - 7.3$

AK. What is the value of the expression when $c = 0$ and $d = -6$?



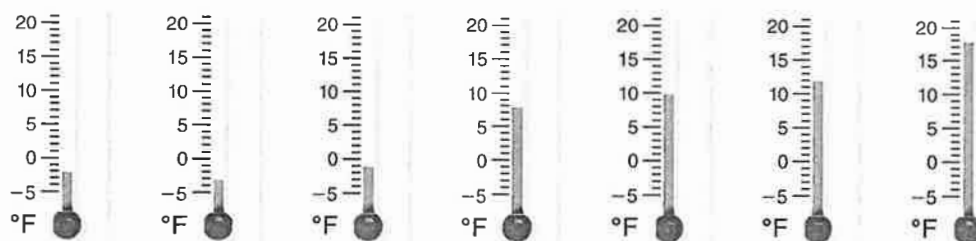
$$\frac{cd - d^2}{4}$$

123. What is the value of the expression?

$$-38 - (-14)$$

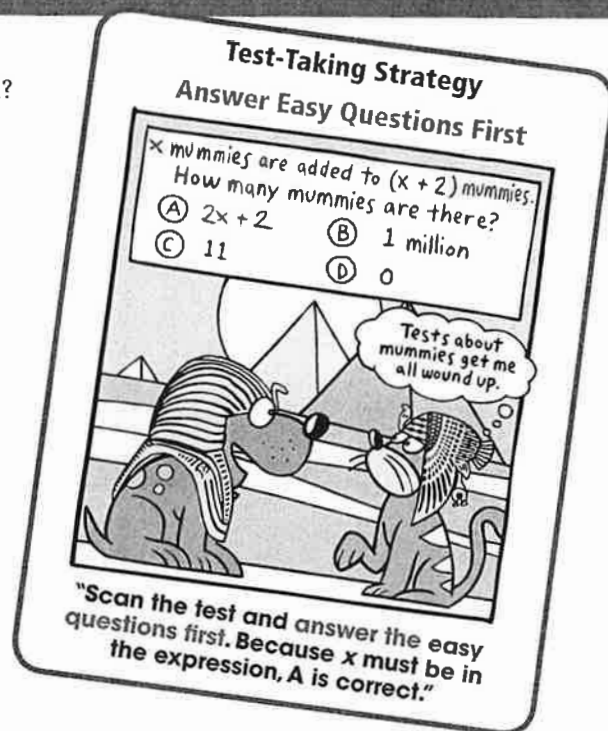
- F. -52
- G. -24
- H. 24
- I. 52

124. The daily low temperatures for a week are shown.



What is the mean low temperature of the week?

- A. -2°F
- B. 6°F
- C. 8°F
- D. 10°F



125. You and a friend collect seashells on a beach. After h minutes, you have collected $(11 + 2h)$ seashells and your friend has collected $(5h - 2)$ seashells. How many total seashells have you and your friend collected?

F. $7h + 9$

G. $3h - 13$

H. $16h$

I. $7h + 13$

- AL. What is the value of the expression?



$$-0.28 \div (-0.07)$$

126. Which list is ordered from least to greatest?

A. $-\left|\frac{3}{4}\right|, -\frac{1}{2}, \left|\frac{3}{8}\right|, -\frac{1}{4}, -\frac{7}{8}$

B. $-\frac{1}{2}, -\frac{1}{4}, \left|\frac{3}{8}\right|, -\left|\frac{3}{4}\right|, -\frac{7}{8}$

C. $\left|-\frac{7}{8}\right|, \left|\frac{3}{8}\right|, -\frac{1}{4}, -\frac{1}{2}, -\left|\frac{3}{4}\right|$

D. $-\left|\frac{3}{4}\right|, -\frac{1}{2}, -\frac{1}{4}, \left|\frac{3}{8}\right|, -\frac{7}{8}$

127. Which number is equivalent to the expression shown?

$$-2\frac{1}{4} - \left(-8\frac{3}{8}\right)$$

F. $-10\frac{5}{8}$

G. $-10\frac{1}{3}$

H. $6\frac{1}{8}$

I. $6\frac{1}{2}$

128. What is the simplified form of the expression?

$$7x - 2(3x + 6)$$

A. $15x + 30$

B. $x - 12$

C. $13x + 12$

D. $-11x$

129. Which expression is *not* equivalent to the expression?

$$72m - 60$$

F. $6(12m - 10)$

G. $4(18m - 15)$

H. $12m$

I. $12(6m - 5)$

AM. You want to buy a bicycle with your friend. You have \$43.50 saved and plan to save an additional \$7.25 every week. Your friend has \$24.50 saved and plans to save an additional \$8.75 every week.



Part A Simplify and interpret an expression that represents the amount of money you and your friend save after w weeks.

Part B After 10 weeks, you and your friend use all of the money and buy the bike. How much does the bike cost? Who pays more towards the cost of the bike? Explain your reasoning.

130. Your friend evaluated $3 + x^2 \div y$ when $x = -2$ and $y = 4$.

$$\begin{aligned} 3 + x^2 \div y &= 3 + (-2^2) \div 4 \\ &= 3 - 4 \div 4 \\ &= 3 - 1 \\ &= 2 \end{aligned}$$

What should your friend do to correct his error?

A. Divide 3 by 4 before subtracting.

B. Square -2 , then divide.

C. Divide -2 by 4, then square.

D. Subtract 4 from 3 before dividing.



Cumulative Practice

131. The school store sells 4 pencils for \$0.80.
What is the unit cost of a pencil?

A. \$0.20 B. \$0.80
C. \$3.20 D. \$5.00

132. What is the simplified form of the expression?

$$3x - (2x - 5)$$

F. $x - 5$ G. $x + 5$
H. $5x - 5$ I. $-x - 5$

133. Which fraction is equivalent to -1.25 ?

A. $-12\frac{1}{2}$ B. $-1\frac{1}{4}$
C. $-\frac{125}{1000}$ D. $1\frac{1}{4}$

- AN. What is the value of x for the proportion $\frac{8}{12} = \frac{x}{18}$?



134. What inequality is represented by the graph?

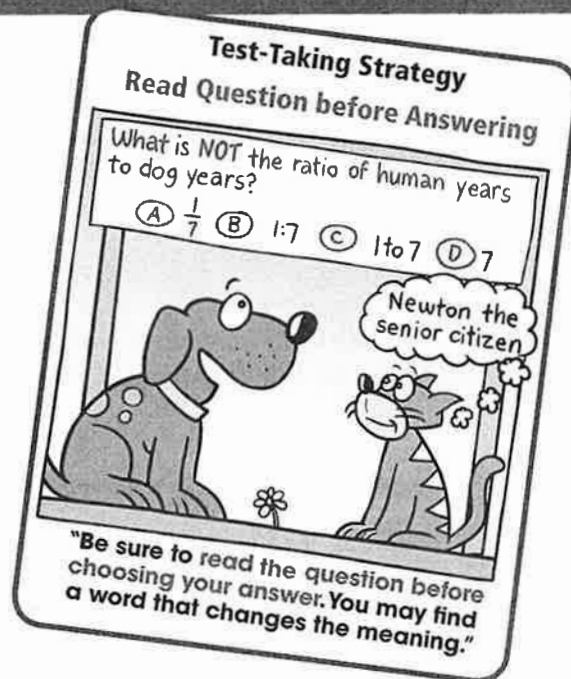


F. $x - 3 < 7$ G. $x + 6 \leq 10$
H. $-5 + x < -1$ I. $x - 8 > -4$

135. What is the missing value in the ratio table?

x	$\frac{2}{3}$	$\frac{4}{3}$	$\frac{8}{3}$	$\frac{10}{3}$
y	6	12	24	

A. $24\frac{2}{3}$ B. 30
C. 36 D. 48



136. Which expression shows factoring $12x + 54$ using the GCF?

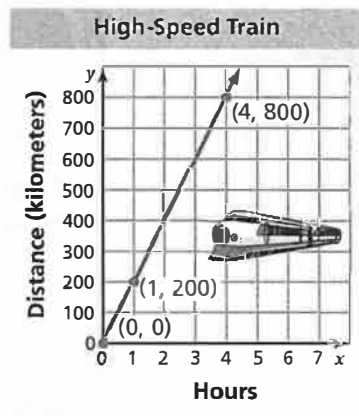
F. $2(6x + 27)$

G. $3(4x + 18)$

H. $6(2x + 9)$

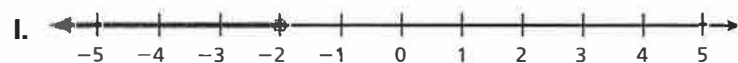
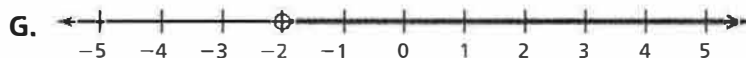
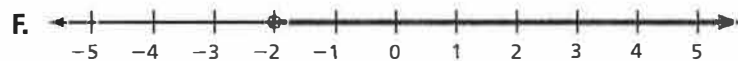
I. $12\left(x + \frac{9}{2}\right)$

137. The distance traveled by a high-speed train is proportional to the number of hours traveled. Which of the following is *not* a valid interpretation of the graph?



- A. The train travels 0 kilometers in 0 hours.
- B. The unit rate is 200 kilometers per hour.
- C. After 4 hours, the train is traveling 800 kilometers per hour.
- D. The train travels 800 kilometers in 4 hours.

138. Which graph represents a number that is at most -2 ?



Think
Solve
Explain

Part B Your friend wants to mark her favorite campsite on the map. She knows that the campsite is 65 miles north of her town. What distance on the map (in inches) represents an actual distance of 65 miles? Show your work and explain your reasoning.



x	y
$\frac{5}{7}$	10
$\frac{9}{7}$	18
$\frac{15}{7}$	30
4	

- F. 2** **G. 3**
H. 7 **I. 13**

E Cumulative Practice

141. A movie theater offers 30% off the price of a movie ticket to students from your school. The regular price of a movie ticket is \$8.50. What is the discounted price that you pay for a ticket?

A. \$2.55 B. \$5.50
C. \$5.95 D. \$8.20

- AQ. What is the least value of x for which the inequality is true?



$$16 \geq -2x$$

142. You are building a scale model of a park that is planned for a city. The model uses the scale 1 centimeter = 2 meters. The park will have a rectangular reflecting pool with a length of 20 meters and a width of 12 meters. In your scale model, what will be the area of the reflecting pool?

F. 60 cm^2 G. 120 cm^2
H. 480 cm^2 I. 960 cm^2

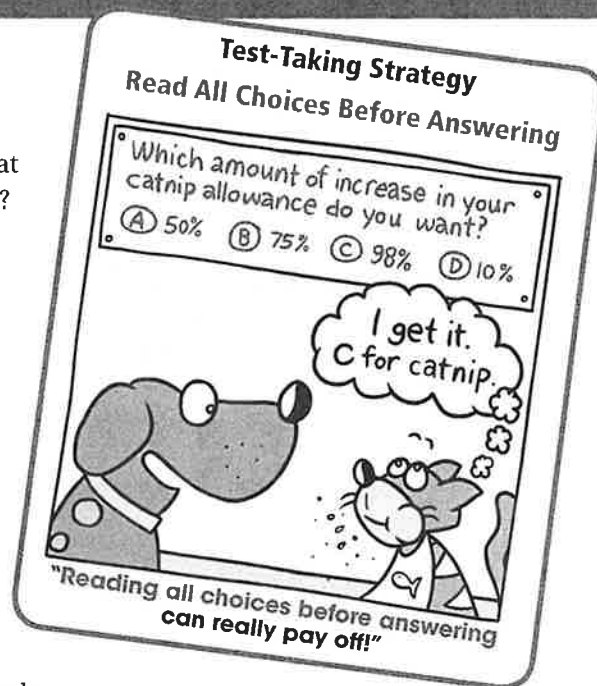
143. Which proportion represents the problem?

"17% of a number is 43. What is the number?"

A. $\frac{17}{43} = \frac{n}{100}$ B. $\frac{n}{17} = \frac{43}{100}$
C. $\frac{n}{43} = \frac{17}{100}$ D. $\frac{43}{n} = \frac{17}{100}$

144. Which list of numbers is in order from least to greatest?

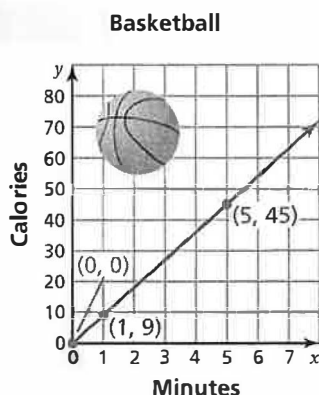
F. $0.8, \frac{5}{8}, 70\%, 0.09$ G. $0.09, \frac{5}{8}, 0.8, 70\%$
H. $\frac{5}{8}, 70\%, 0.8, 0.09$ I. $0.09, \frac{5}{8}, 70\%, 0.8$



AR. What is the value of $\frac{9}{8} \div \left(-\frac{11}{4}\right)$?



145. The number of calories you burn by playing basketball is proportional to the number of minutes you play. Which of the following is a valid interpretation of the graph?



- A. The unit rate is $\frac{1}{9}$ calorie per minute.
- B. You burn 5 calories by playing basketball for 45 minutes.
- C. You do not burn any calories if you do not play basketball for at least 1 minute.
- D. You burn an additional 9 calories for each minute of basketball you play.
146. A softball team is ordering uniforms. Each player receives one of each of the items shown in the table.

Item	Jersey	Pants	Hat	Socks
Price (dollars)	x	15.99	4.88	3.99

Which expression represents the total cost (in dollars) when there are 15 players on the team?

- F. $x + 24.86$
- G. $15x + 372.90$
- H. $x + 372.90$
- I. $x + 387.90$

147. Your friend solves the equation. What should your friend do to correct the error that he made?

$$-3(2 + w) = -45$$

$$2 + w = -15$$

$$w = -17$$

- A. Multiply -45 by -3 .
- B. Add 3 to -45 .
- C. Add 2 to -15 .
- D. Divide -45 by -3 .

- AS. You are comparing the costs of a certain model of ladder at a hardware store and at an online store.



- Part A* What is the total cost of buying the ladder at each of the stores? Show your work and explain your reasoning.
- Part B* Suppose that the hardware store is offering 10% off the price of the ladder and that the online store is offering free shipping and handling. Which store offers the lower total cost for the ladder? by how much? Show your work and explain your reasoning.

148. Which graph represents the inequality $-5 - 3x \geq -11$.

