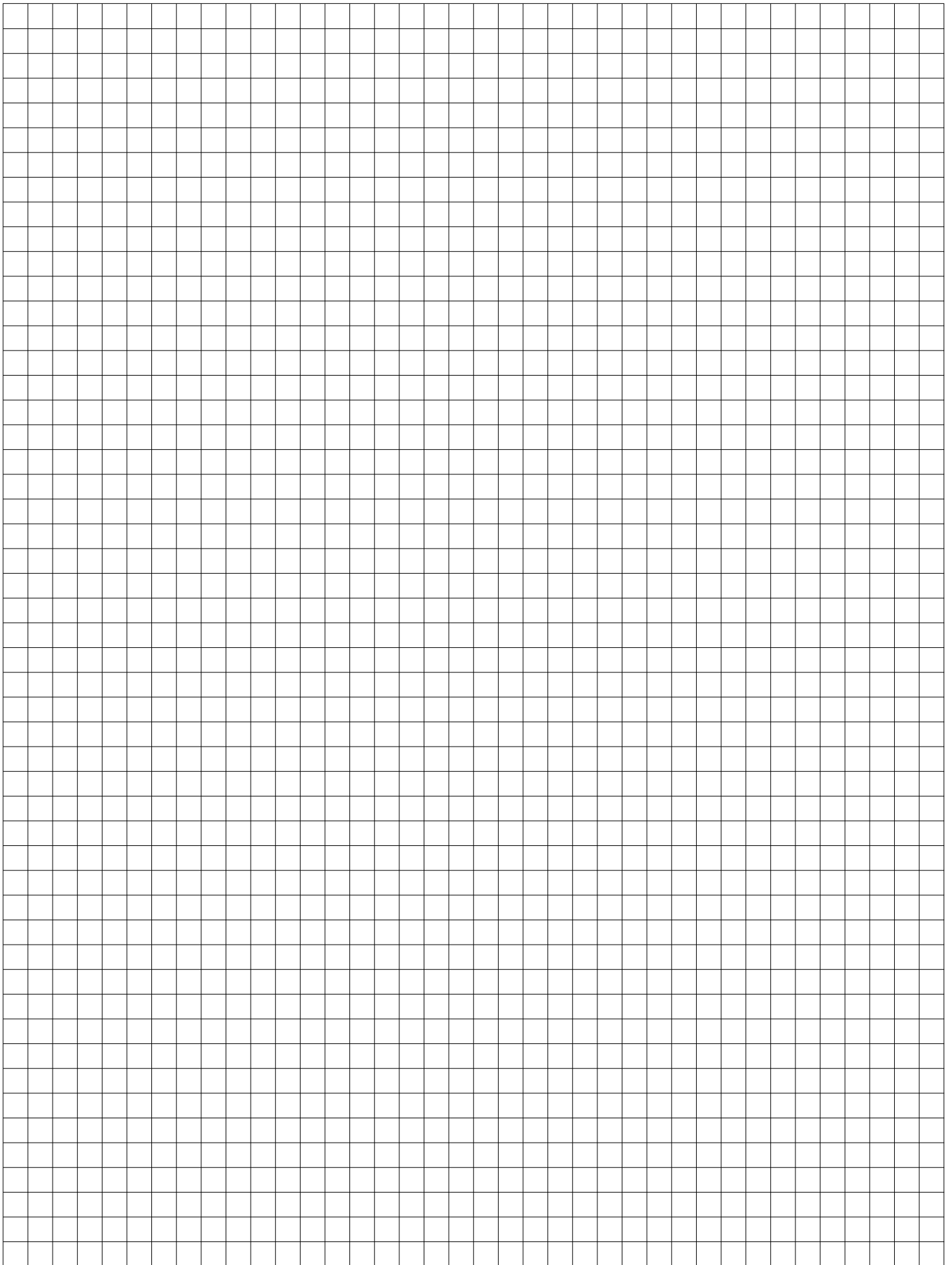


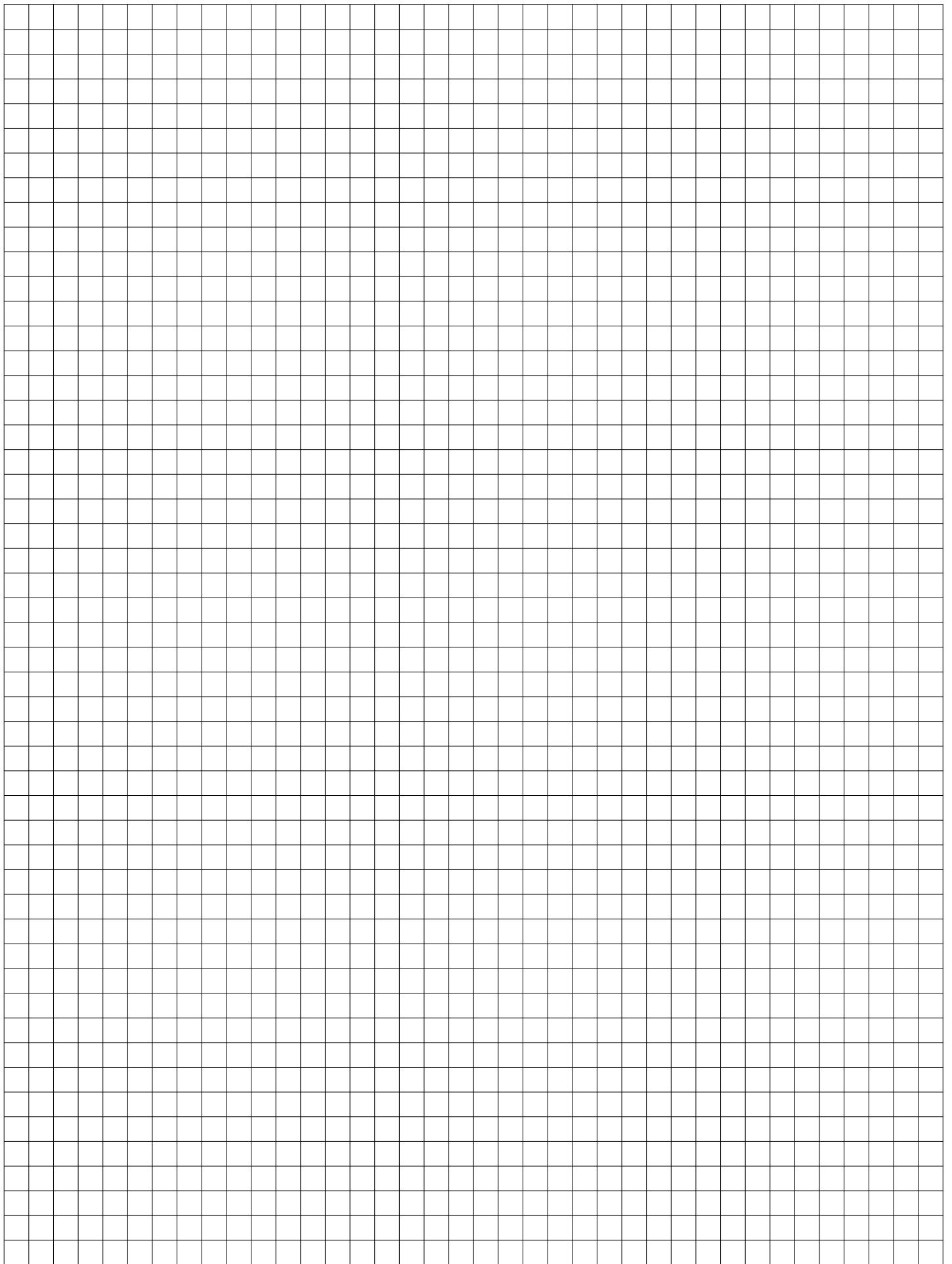


Beginning-of-Year Assessment (BOY)

Grade 6 Mathematics Standards

This BOY assessment is intended to assess current grade 7 students who completed grade 6 mathematics in the 2019-2020 school year.





Congratulations! You worked very hard in school to learn many new things. Taking this Grade 6 Mathematics Standards test is a great way to show your family and school what you learned. It is okay if you do not know all the answers. Just try your best. You are amazing! You are taking this test so adults can learn more about how to help you this year.

You can ask an adult for help if you do not understand the directions. Make sure you have the reference material with the rulers. It might help you with this test. You can also use scratch paper and graph paper for this test.

If you do not know the answer to a question, choose the answer you think might be correct. You must answer the questions on your own.

You are now ready to start. Take your time and remember that trying your best is what is important. You're awesome, and you'll do great!



BOY Assessment Grade 6 Mathematics Standards

Student _____
Class _____
Date _____

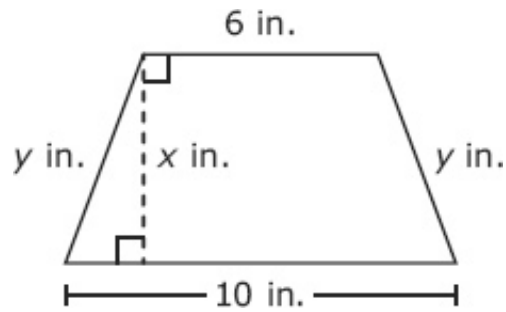
1. The expression shown can be used to calculate the amount of money in dollars a grocery store customer should receive in change when paying with \$50.

$$50 - (14 + 12 + 2(5) + 2(2) + 3)$$

What amount of change in dollars should the customer receive?

- A. \$4
- B. \$26
- C. \$29
- D. \$7

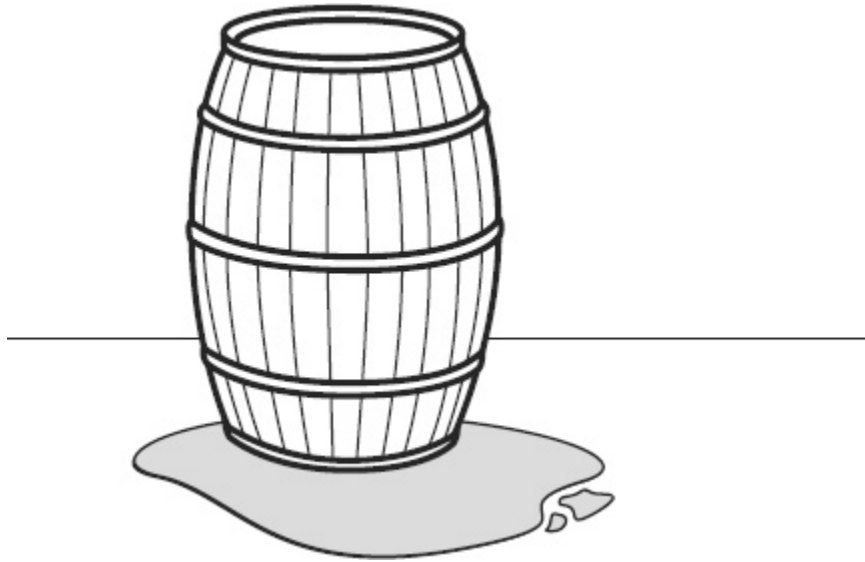
2. The face of a lamp shade is shaped like a trapezoid. The dimensions of the face are shown in the diagram.



Which equation can be used to find A , the area of the face of the lamp shade in square inches?

- A. $A = \frac{1}{2}(6 + 10)y$
- B. $A = \frac{1}{2}(6 + 10)x$
- C. $A = \frac{1}{2}(6) + (10)x$
- D. $A = \frac{1}{2}(6) + (10)y$

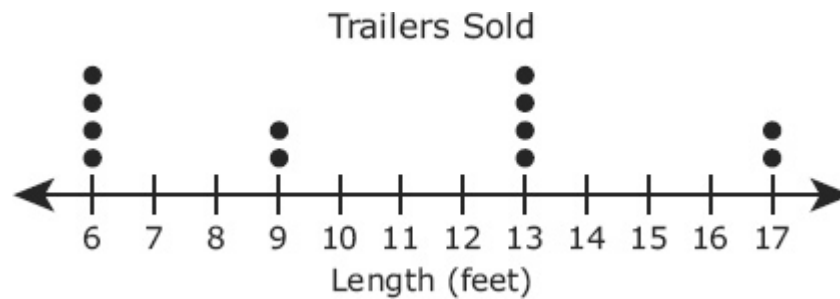
3. A barrel contained 60 gallons of water. Water leaked out of the barrel at a rate of 5 gallons every 3 days.



At this rate, how many days did it take for all 60 gallons of water to leak out of the barrel?

- A. 20 days
- B. 12 days
- C. 100 days
- D. 36 days

4. The dot plot shows the lengths of the 12 trailers sold at a store last month.



Which statement about the data is true?

- A. The interquartile range is 7, and the range is 17.
 - B. The interquartile range is 7, and the range is 11.
 - C. The interquartile range is 2.75, and the range is 17.
 - D. The interquartile range is 2.75, and the range is 11.
5. Which two expressions are equivalent?
- A. $4 + (3 \cdot y)$ and $(4 + 3) \cdot y$
 - B. $(18 \div y) + 10$ and $10 + (y \div 18)$
 - C. $12 - (y \cdot 2)$ and $12 - (2 \cdot y)$
 - D. $(10 - 6) \div y$ and $10 - (6 \div y)$

6. A carpenter wants to cut a board that is $\frac{5}{6}$ ft long into pieces that are $\frac{5}{16}$ ft long. The carpenter will use the expression shown to calculate the number of pieces that can be cut from the board.

$$\frac{5}{6} \div \frac{5}{16}$$

Which expression can also be used to calculate the number of pieces that can be cut from the board?

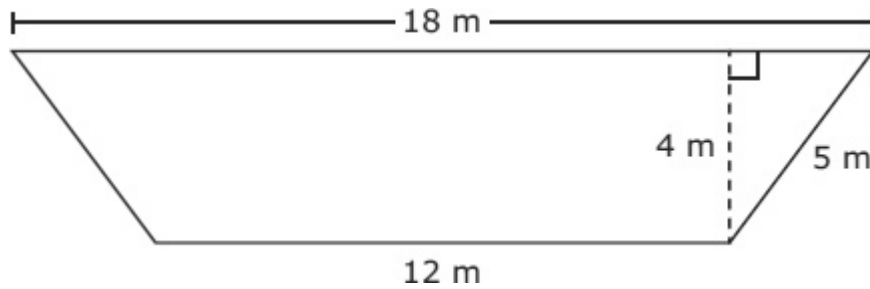
A. $\frac{5}{6} \cdot \frac{16}{5}$

B. $\frac{5}{6} \cdot \frac{5}{16}$

C. $\frac{6}{5} \div \frac{5}{16}$

D. $\frac{6}{5} \div \frac{16}{5}$

7. The dimensions of a lawn shaped like a trapezoid are given in meters.



What is the area of the lawn in square meters?

- A. $108m^2$
- B. $60m^2$
- C. $72m^2$
- D. $120m^2$

8. What is the value of $\frac{4}{15} \div \frac{2}{3}$?

- A. $\frac{8}{45}$
- B. $\frac{14}{15}$
- C. $\frac{5}{2}$
- D. $\frac{2}{5}$

9. The weights of four puppies are shown in pounds.

$$9.5 \quad 9\frac{3}{8} \quad 9.125 \quad 9\frac{3}{4}$$

Which list shows these weights in order from greatest to least?

A. $9\frac{3}{4}$ 9.5 $9\frac{3}{8}$ 9.125

B. 9.5 $9\frac{3}{8}$ $9\frac{3}{4}$ 9.125

C. 9.125 $9\frac{3}{8}$ 9.5 $9\frac{3}{4}$

D. $9\frac{3}{4}$ $9\frac{3}{8}$ 9.5 9.125

10. Jamal wrote the inequality $\frac{x}{16} \leq 6$. Which situation is best represented by this inequality?

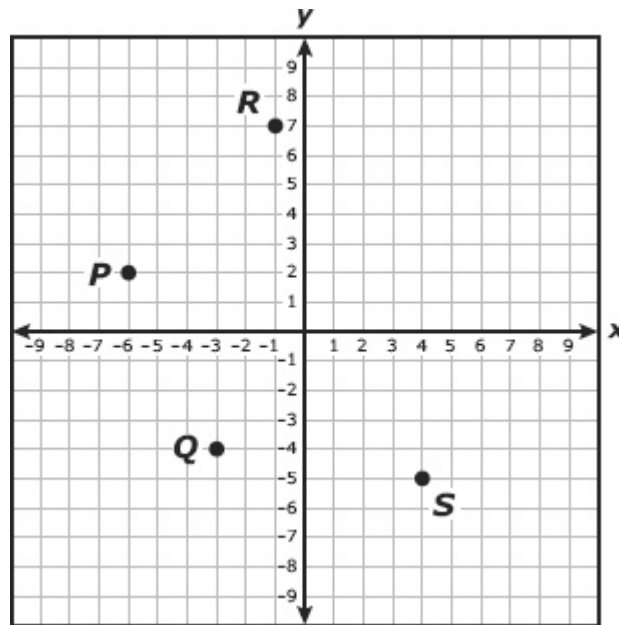
A. Jamal divided x pieces of paper among 16 students, and each student received fewer than 6 pieces of paper.

B. Jamal placed x cards in 16 stacks, and there were no more than 6 cards in each stack.

C. Jamal separated x shirts into 6 stacks, and each stack had at least 16 shirts.

D. Jamal shared 16 markers with x classmates, and each classmate had fewer than 6 markers.

11. The coordinate grid shows points P , Q , R , and S . All the coordinates for these points are integers.



What is the value of the x -coordinate of point P ?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

12. The table shows the relationship between r and s , where s is the independent variable.

s	1	2	3	4	5	6
r	$\frac{1}{6}$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{2}{3}$	$\frac{5}{6}$	1

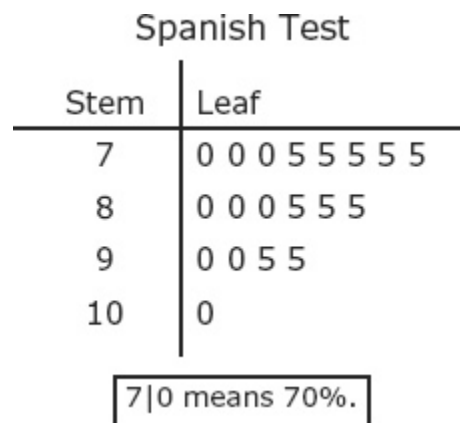
Which equation represents the relationship between r and s ?

- A. $s = \frac{1}{6}r$
- B. $r = s - \frac{5}{6}$
- C. $s = r - \frac{5}{6}$
- D. $r = \frac{1}{6}s$
13. Consumers sometimes make choices that cause negative information to be put on their credit reports. Which of these is the most likely number of years that this negative information will remain on their credit reports?
- A. 3 to 6 years
- B. 7 to 10 years
- C. 11 to 14 years
- D. 15 to 18 years

14. The weight of one serving of trail mix is 2.5 ounces. How many servings are there in 22.5 ounces of trail mix?

- A. 11.5
- B. 25.0
- C. 56.25
- D. 9.0

15. The stem and leaf plot shows the percentage of questions on a Spanish test that were answered correctly by each student in a class.



Which statement is true?

- A. Nine students answered 55% of the questions correctly.
- B. Half the students answered 70% or 75% of the questions correctly.
- C. Eight students answered more than 80% of the questions correctly.
- D. Ten students answered 100% of the questions correctly.

16. Alyssa will correctly label the numbers 48.4 , $48\frac{1}{2}$, 48.09 , and $48\frac{3}{5}$ on the number line below.



Which number will be located closest to 49?

- A. 48.4
 - B. $48\frac{1}{2}$
 - C. 48.09
 - D. $48\frac{3}{5}$
17. Which equation has a solution of $k = 6.5$?

- A. $-3k = 19.5$
- B. $-1 + k = 7.5$
- C. $-7k = -45.5$
- D. $-2 + k = -8.5$

18. Elida will use six different wires for a science project. The fractions represent the diameters of these wires in inches.

$$\frac{7}{16}, \frac{1}{2}, \frac{3}{8}, \frac{9}{32}, \frac{5}{16}, \frac{15}{32}$$

Which list shows the diameters of the wires in order from least to greatest?

- A. $\frac{1}{2}, \frac{3}{8}, \frac{7}{16}, \frac{5}{16}, \frac{15}{32}, \frac{9}{32}$
- B. $\frac{9}{32}, \frac{15}{32}, \frac{5}{16}, \frac{7}{16}, \frac{3}{8}, \frac{1}{2}$
- C. $\frac{1}{2}, \frac{3}{8}, \frac{5}{16}, \frac{7}{16}, \frac{9}{32}, \frac{15}{32}$
- D. $\frac{9}{32}, \frac{5}{16}, \frac{3}{8}, \frac{7}{16}, \frac{15}{32}, \frac{1}{2}$

19. The list shows the number of viewers of an online music video each day for 5 consecutive days.

5 35 245 1,715 12,005

By what factor did the number of viewers change each day from the first day to the fifth day?

- A. 7
- B. 12,000
- C. 2,401
- D. 30

20. Yvonne is researching the effect of education on annual income. A summary of her research is shown in the table.

Effect of Education on Annual Income

Level of Education	Annual Income (dollars)
High school diploma	33,904
Associate's degree	40,820
Bachelor's degree	55,432

Based on the data in the table, how much more does a person with an associate's degree earn than a person with only a high school diploma over 10 years?

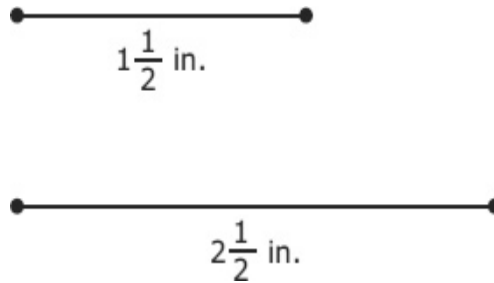
- A. \$6,916
- B. \$74,724
- C. \$747,240
- D. \$69,160

21. On Wednesday 72% of the customers who bought gas at a gas station made additional purchases. There were 250 customers who bought gas.

How many of these 250 customers made additional purchases?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

22. The lengths of two line segments are shown.



Use the ruler provided to measure the length of a third line segment to the nearest $\frac{1}{2}$ inch.



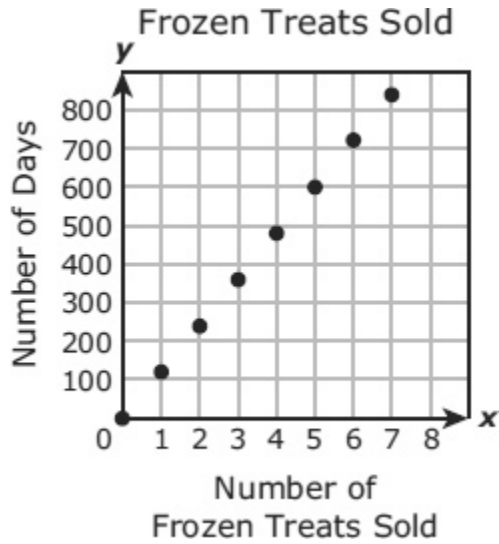
Which statement is true about these three line segments?

- A. These line segments can form a triangle, because each side of the triangle can be a different length.
- B. These line segments can form a triangle, because the longest side of the triangle can be exactly 4 inches long.
- C. These line segments cannot form a triangle, because at least two sides of the triangle must be the same length.
- D. These line segments cannot form a triangle, because the longest side of the triangle must be shorter than 4 inches.

23. The owner of a food cart sells an average of 120 frozen treats per day during the summer.

Which graph best shows this relationship between the number of days and the number of frozen treats sold?

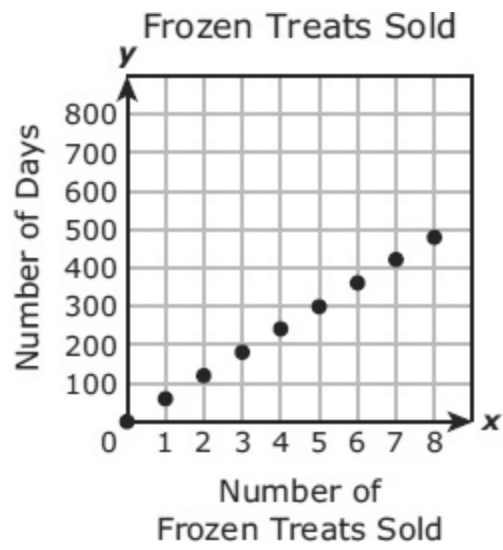
A.



B.



C.



D.



24. Keith wrote the expression shown to determine the cost in dollars for an upcoming trip.

$$(127.50 - 23.50) + 3(86.50 + 4)$$

Which expression is equivalent to the one Keith wrote?

- A. $107(90.50)$
- B. $101(90.50)$
- C. $104 + 3(90.50)$
- D. $104 + 263.50$

25. Each child in a group was asked to choose a single favorite type of cereal. The table shows the number of children who chose each type of cereal as a favorite.

Cereal

Type of Cereal	Number of children
Oatmeal	15
Grits	10
Wheat porridge	2
Cold cereal	20
Other	3

Which statement is NOT supported by the data in the table?

- A. More than 5% of the children chose "other" as the favorite type of cereal.
 - B. Oatmeal is the favorite type of cereal for 15% of the children.
 - C. Cold cereal is associated with the mode for the favorite type of cereal.
 - D. Grits is the favorite type of cereal for 20% of the children.
26. Saritha will construct a rectangle that has a height of 4 units and an area of up to 48 square units. Which inequality represents all the possible lengths in units of the bases, b , that Saritha can use to construct this rectangle?
- A. $b \leq 44$
 - B. $b \geq 52$
 - C. $b \leq 12$
 - D. $b \geq 192$

27. A meteorologist at a television station reported that a town received 0.95 in. of rain. Which fraction is equivalent to this amount of rain in inches?

A. $\frac{19}{50}$ in.

B. $\frac{19}{20}$ in.

C. $\frac{95}{10}$ in.

D. $\frac{9}{5}$ in.

28. The cost of downloading one song from a website is \$0.99. Which equation can be used to find t , the cost in dollars of downloading n songs?

A. $t = 0.99 + n$

B. $n = 0.99 + t$

C. $t = 0.99n$

D. $n = 0.99t$

29. Amy has 5 yd of border to put around a garden. She uses all the border to make four sections that are the same length. Which expression does NOT equal the length of one of these sections in yards?

A. $4 \div 5$

B. $4\overline{)5}$

C. $\frac{5}{4}$

D. $5 \div 4$

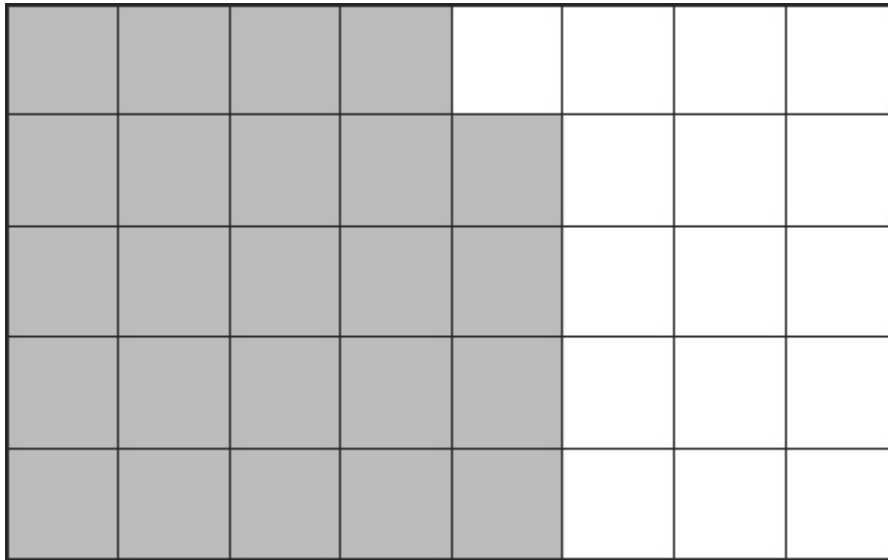
30. The list shows the area in square feet of each apartment available for rent in a building.

565, 961, 867, 517, 627, 714, 517, 728

What is the range of these areas in square feet?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

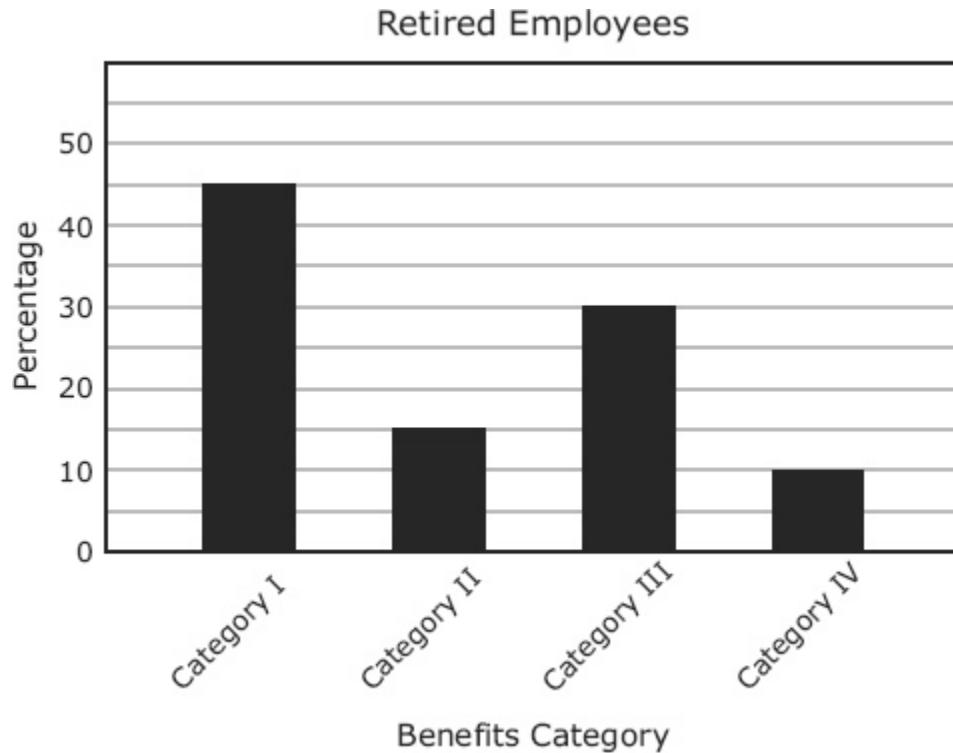
31. The shaded area on the grid represents the part of a rectangular wall that was painted. Each small square on the wall has the same dimensions.



What percentage of the wall was painted?

- A. 64%
- B. 24%
- C. 60%
- D. 16%

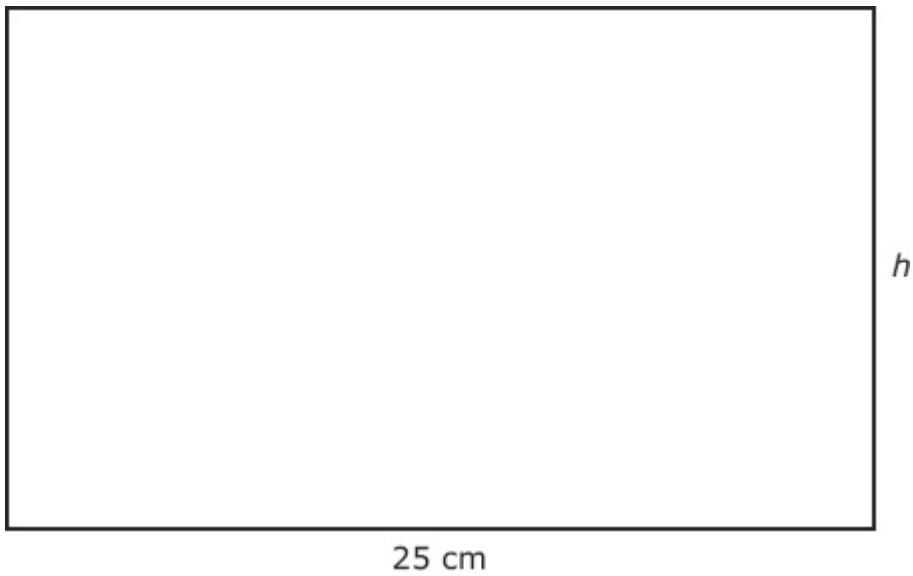
32. Employees who have retired from a company are placed in different benefit categories. The bar graph shows the percentages of the retired employees in different benefit categories.



Which statement about the employees is supported by the data in the bar graph?

- A. More than half the employees are in Category I.
- B. The number of employees in Category II is twice the number of employees in Category III.
- C. The number of employees in Category II or Category III is greater than the number of employees in Category I.
- D. The number of employees in Category I is three times the number of employees in Category II.

33. The area of the rectangle shown is 375 square centimeters.



What is h , the height of the rectangle in centimeters?

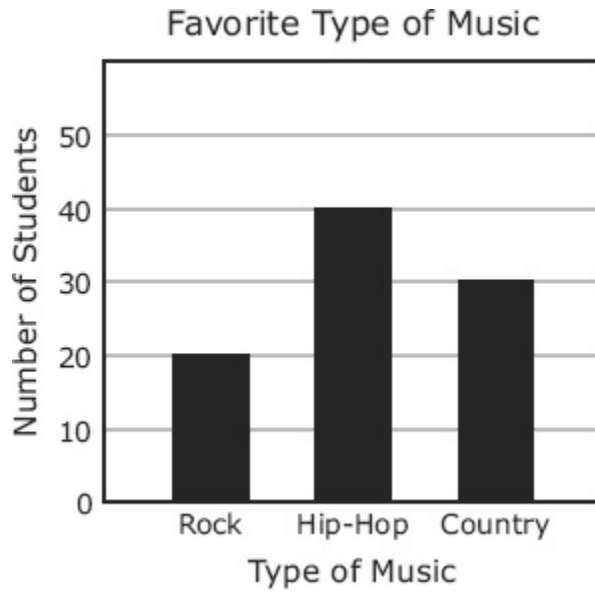
- A. 350 cm
- B. 7.5 cm
- C. 15 cm
- D. 162.5 cm

- 34.** A restaurant offered cooking classes on 24 of the 30 days in November. What decimal is equivalent to the fraction of days in November that classes were offered at the restaurant?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.

- 35.** A warehouse floor has a perimeter of 6,615 feet. What is the perimeter of the floor in yards?
- A.** 2,205 yd
 - B.** 19,845 yd
 - C.** 78,380 yd
 - D.** 735 yd

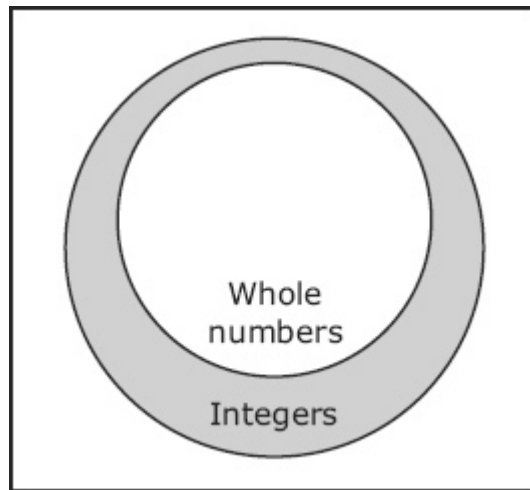
36. Aiden asked a group of students to choose their favorite type of music from the choices of rock, hip-hop, and country. The results of the survey are shown in the graph.



Based on the graph, how many students in a class of 360 students would be expected to choose hip-hop or rock as their favorite type of music?

- A. 240
- B. 80
- C. 60
- D. 180

37. The Venn diagram shows the relationships among different sets of numbers.



Which number would be located in the shaded part of the diagram?

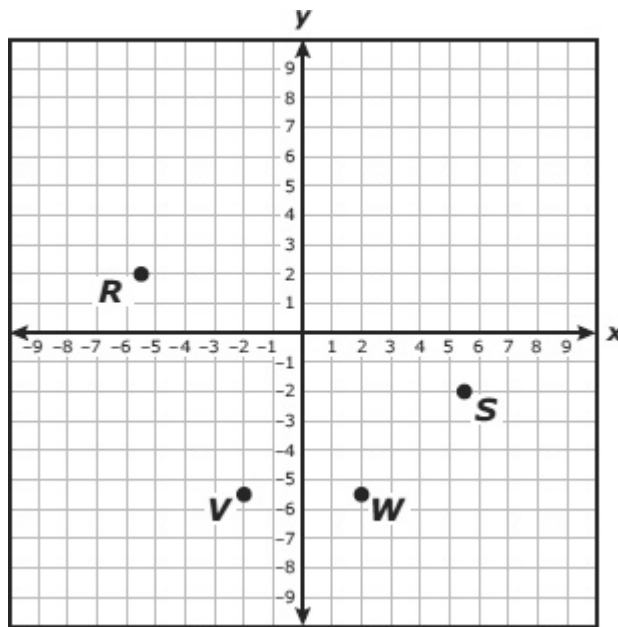
A. -1.7

B. -8

C. $\frac{2}{3}$

D. 10

38. Four points are graphed on the coordinate grid.



Which point is best represented by the ordered pair $(2, -5.5)$?

- A. Point *W*
- B. Point *V*
- C. Point *S*
- D. Point *R*

