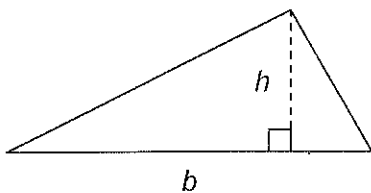


Grade 6 Formula Sheet

Formulas that you may need to work questions on this test are found below. You may refer back to this page at any time during the mathematics test.

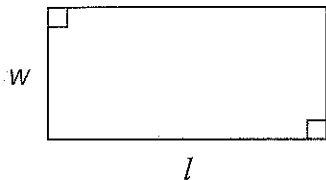
2016
Grade 6

Triangle



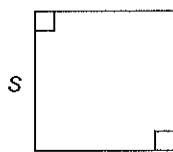
$$A = \frac{1}{2}bh$$

Rectangle



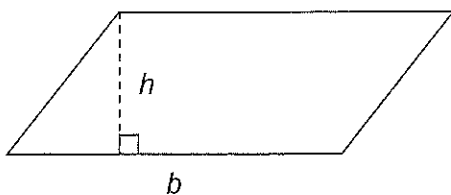
$$A = lw$$

Square



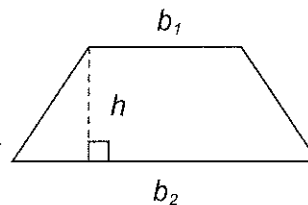
$$A = s^2$$

Parallelogram



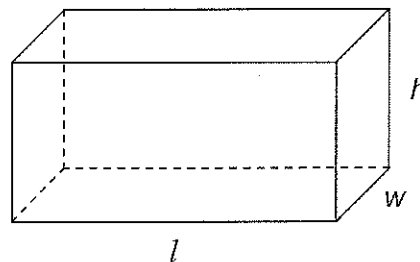
$$A = bh$$

Trapezoid



$$A = \frac{1}{2}h(b_1 + b_2)$$

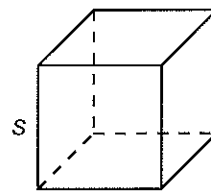
Rectangular Prism



$$V = lwh$$

$$SA = 2lw + 2lh + 2wh$$

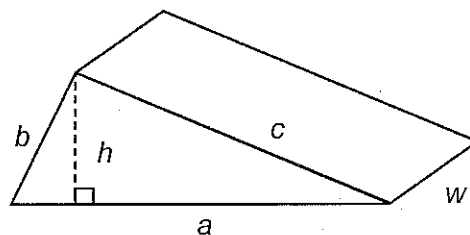
Cube



$$V = s \cdot s \cdot s$$

$$SA = 6s^2$$

Triangular Prism



$$SA = ah + aw + bw + cw$$

Question 1 in this sampler is to be solved without the use of a calculator.

MULTIPLE-CHOICE ITEMS

1. Divide: $\frac{3}{4} \div \frac{2}{3}$

A. $\frac{1}{2}$

B. $\frac{8}{9}$

C. $\frac{9}{8}$

D. 2

2. Greg's social studies grade is based on two quizzes, two tests, and one project. The table below shows Greg's scores on these items, as well as each item's weight in determining his final grade.

To determine his final grade, Greg's teacher multiplies each score by its weight, adds the products together, and then divides the sum by 10. What is Greg's final grade?

Greg's Social Studies Scores

Item	Score	Weight
quiz 1	78	1
quiz 2	90	1
test 1	85	2
test 2	89	2
project	92	4

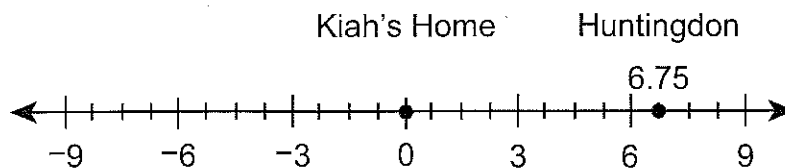
A. 79.9

B. 86.8

C. 88.4

D. 92.0

3. Kiah plotted the locations of her home and the city of Huntington on the number line shown below.



Williamsburg is the same distance from Kiah's home as Huntington, but it is in the opposite direction. Which statement best describes how to find the location of Williamsburg on the number line?

- A. The opposite of 6.75 is -6.75 , so Williamsburg is at -6.75 .
- B. The sum of 6.75 and 6.75 is 13.5, so Williamsburg is at 13.5.
- C. The numbers 6.75 and -6.75 are the same, so Williamsburg is at 6.75.
- D. Opposites, such as 6.75 and -6.75 , sum to zero, so Williamsburg is at 0.

4. James measures the water level from the top of a dock twice a day. The water level in the morning is -2 feet. The water level in the afternoon is -6.5 feet. Which statement about the relationship between the two measurements is true?
- A. A water level of -6.5 feet is higher than a water level of -2 feet, as $-6.5 > -2$.
 B. A water level of -2 feet is lower than a water level of -6.5 feet, as $-2 > -6.5$.
 C. A water level of -6.5 feet is the same as a water level of -2 feet, as $-6.5 = -2$.
 D. A water level of -2 feet is higher than a water level of -6.5 feet, as $-2 > -6.5$.
5. The ratio of the number of boys to the number of girls in the cast of a school play is $1 : 5$. Which statement **must** describe the cast of the play?
- A. There are exactly 6 students in the cast.
 B. There is 1 boy for every 5 girls in the cast.
 C. There are 4 more girls than boys in the cast.
 D. There is 1 boy out of the 5 students in the cast.
6. For a recipe, Harris uses 2 cups of white sugar for each cup of brown sugar. How many cups of brown sugar does Harris use when he uses 1 cup of white sugar?
- A. $\frac{1}{2}$ B. 1 C. $1\frac{1}{2}$ D. 2
7. Jasmine earns \$36 for 4 hours of baby-sitting. She charges a constant hourly rate. Which table correctly shows the amount Jasmine earns baby-sitting for different numbers of hours?

A. **Jasmine's Baby-Sitting Earnings**

Number of Hours	Amount Earned (\$)
2	18
4	36
6	54
8	72

B. **Jasmine's Baby-Sitting Earnings**

Number of Hours	Amount Earned (\$)
2	34
4	36
6	38
8	40

C. **Jasmine's Baby-Sitting Earnings**

Number of Hours	Amount Earned (\$)
2	27
4	36
6	45
8	54

D. **Jasmine's Baby-Sitting Earnings**

Number of Hours	Amount Earned (\$)
2	32
4	36
6	42
8	50

8. Alon started in 60% of his team's basketball games this season. He started a total of 12 games. How many games did Alon's team play this season?

- A. 6 B. 7 C. 18 D. 20

9. An inequality is shown below.

$$x + 2.5 < 20$$

What is the **greatest** value of x from the set $\{10.5, 12.5, 17.5, 19.5\}$ that makes the inequality true?

- A. 10.5 B. 12.5 C. 17.5 D. 19.5

10. There are 150 children playing in a park.

- The number of boys (x) playing in the park is **greater** than 50.
- The number of girls (y) playing in the park is **less** than 100.

Which values of x and y could be the numbers of boys and girls playing in the park?

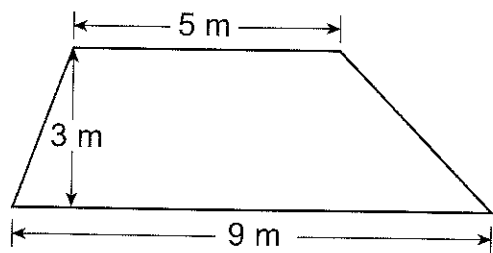
- A. $x = 35$
 $y = 115$ B. $x = 50$
 $y = 100$ C. $x = 55$
 $y = 85$ D. $x = 60$
 $y = 90$

11. Gary saves \$2.50 each day. Which equation describes the relationship between the number of days (d) Gary saves money and the total amount of money (m), in dollars, that he saves?

- A. $m = 2.50d$ B. $m = d - 2.50$ C. $d = 2.50m$ D. $d = \frac{2.50}{m}$

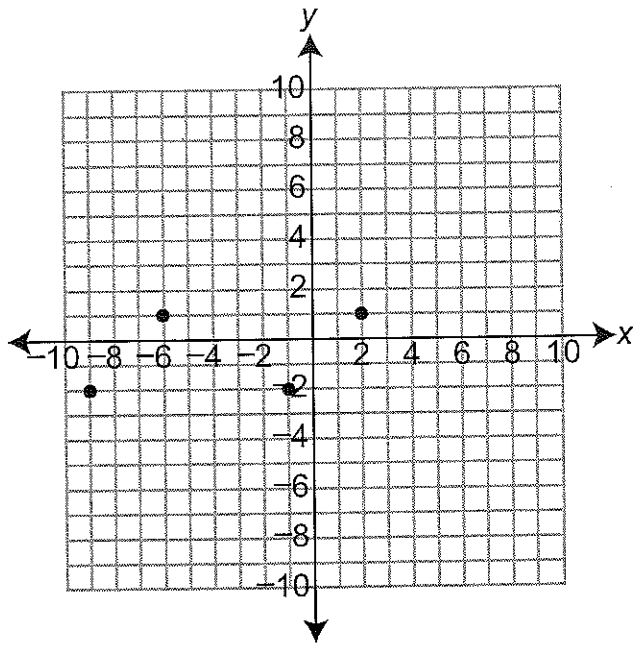
12. A trapezoid is shown below.

What is the area of the trapezoid?



- A. 21 m^2
B. 27 m^2
C. 34 m^2
D. 42 m^2

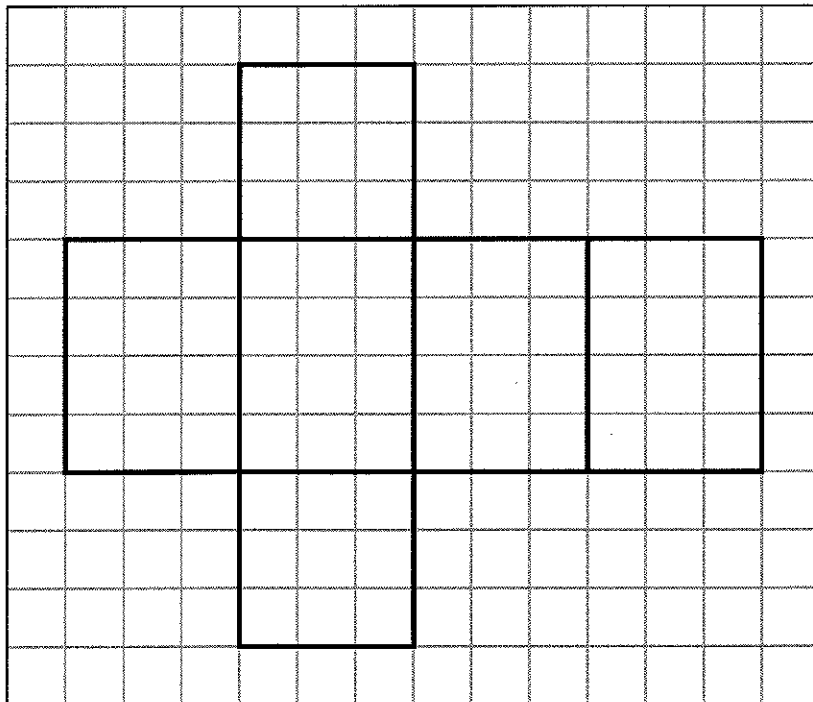
13. The vertices of a parallelogram are plotted on the coordinate plane shown below.



What is the area, in square units, of the parallelogram?

- A. 8
- B. 9
- C. 12
- D. 24

14. Rosa built a jewelry box. She first cut out all the pieces she would need by using the pattern shown below.

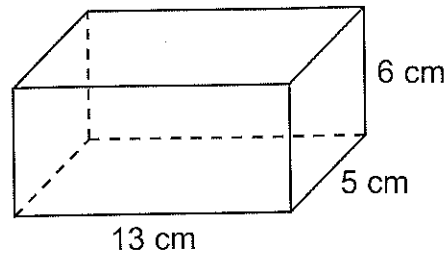


Based on the pattern, which phrase **best** describes the shape of the completed jewelry box?

- A. a cube with a box top
- B. a cube with no box top
- C. a rectangular prism with a box top
- D. a rectangular prism with no box top

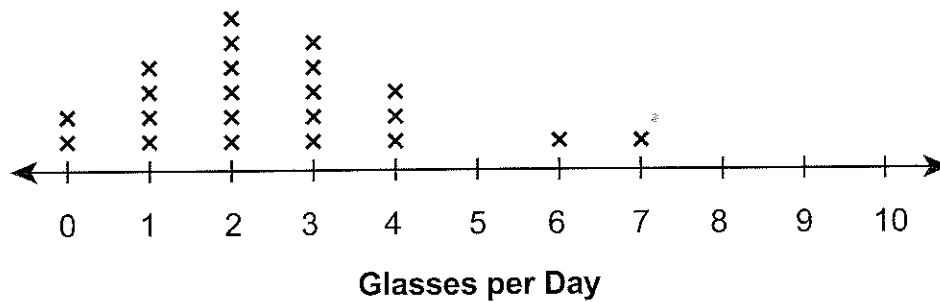
15. A rectangular prism is pictured below. What is the surface area of the rectangular prism?

- A. 173 cm^2
- B. 320 cm^2
- C. 346 cm^2
- D. 390 cm^2

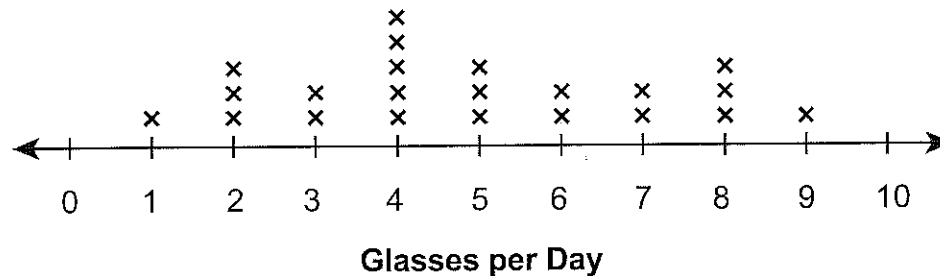


16. Franco asked his soccer team how many glasses of milk and how many glasses of water each player drinks per day. The line plots below show his data.

Amount of Milk Each Player Drinks



Amount of Water Each Player Drinks



Which statement correctly describes the number of glasses of milk and the number of glasses of water each player drinks per day?

- A. The mean would be a better measure of center than the median for the number of glasses of milk the players drink.
- B. There is less variability in the number of glasses of milk the players drink than the number of glasses of water they drink.
- C. The median number of glasses of milk the players drink is greater than the mean number of glasses of milk the players drink.
- D. The range for the number of glasses of milk and the range for the number of glasses of water the players drink are the same.

Question 1 in this sampler is to be solved without the use of a calculator.

MULTIPLE-CHOICE ITEMS

1. Simplify: $2(2.036) - 2.268$

- A. 1.768 B. 1.804 C. 2.216 D. 2.232

2. Grace has $15\frac{3}{4}$ cups of plant food. How many potted flowers does Grace feed?

- She divides the plant food equally into 3 bags. A. $4\frac{1}{2}$
- She uses all the plant food in 1 of the bags to feed her potted flowers. B. 5
- She feeds each potted flower $\frac{3}{4}$ cup of plant food. C. $5\frac{1}{2}$
- D. 7

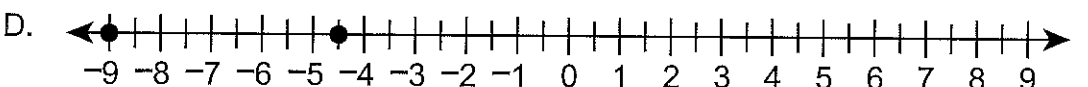
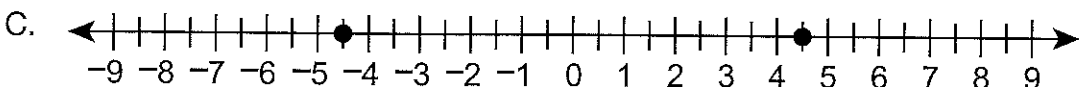
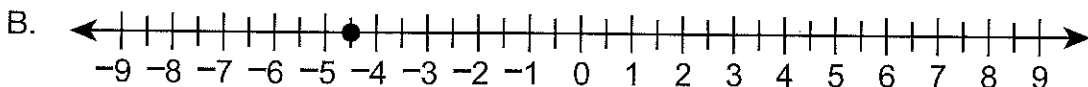
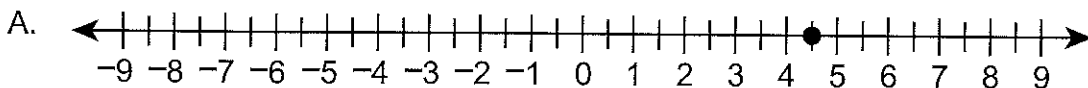
3. Ivan packed 56 apples and 72 pears into boxes. He packed both apples and pears into each box. He put the same number of apples into every box and the same number of pears into every box. He sold each box for \$19.95. What is the **greatest** amount of money Ivan could earn selling all the boxes of fruit?

- A. \$39.90 C. \$159.60
B. \$79.80 D. \$179.55

4. Which statement about the opposite of a number is correct?

- A. The opposite of 5 is $\frac{1}{5}$. C. The opposite of -5 is 0.
B. The opposite of 0 is 0. D. The opposite of -5 is 1.

5. Which number line shows a point graphed at **every** location that represents a number with an absolute value of 4.5?



6. Elliot plants lettuce and onions in his garden. He always plants the same ratio of lettuce plants to onion plants, as shown in the table below.

Based on the information in the table, how many onion plants would Elliot plant for 1 lettuce plant?

Elliot's Plants

Lettuce Plants	Onion Plants
1	?
4	12
6	18
8	24

- A. 3
B. 4
C. 6
D. 9

7. Which expression has the **least** value?

- A. $4^1 + 12$ C. $25 - 4^2$
B. 4^3 D. $4^4 - 160$

8. An algebraic expression is described below.

six more than the product of four times the difference between x and 3

What is the value of the expression when $x = 8$?

- A. 14 C. 35
B. 26 D. 50

9. Marty read x books. Jackie read 28 books, which is 6 books more than the number of books Marty read. The equation below can be used to find the number of books Marty read.

$$x + 6 = 28$$

Ron read 3 times as many books as Marty. How many books did Ron read?

- A. 22 C. 66
B. 34 D. 78

10. A gray whale swims 161 kilometers in 24 hours. The equation below can be used to find the rate (r), in kilometers per hour (kph), at which the gray whale swims.

$$r \times 24 = 161$$

Rounded to the nearest tenth, what is the rate at which the gray whale swims?

- A. 3.8 kph C. 6.7 kph
B. 3.9 kph D. 6.8 kph

11. The table below shows the relationship between the number of tables and the number of chairs in each of three meeting rooms of an office building.

Meeting Rooms

Number of Tables (t)	Number of Chairs (c)
3	24
5	40
9	72

- A. $c = 3t$
 B. $c = 8t$
 C. $c = 21t$
 D. $c = 24t$

Which equation describes the relationship between the number of tables and the number of chairs in each meeting room?

12. A store is having a sale. All items are discounted 20% off the original price. Which table shows the relationship between the original price and the discount?

A. **20% Off Sale**

Original Price	Discount
\$9.95	\$0.20
\$19.95	\$0.40
\$29.95	\$0.60
\$39.95	\$0.80

B. **20% Off Sale**

Original Price	Discount
\$9.95	\$1.99
\$19.95	\$3.99
\$29.95	\$5.99
\$39.95	\$7.99

C. **20% Off Sale**

Original Price	Discount
\$29.50	\$0.59
\$32.00	\$0.64
\$38.75	\$0.78
\$42.50	\$0.85

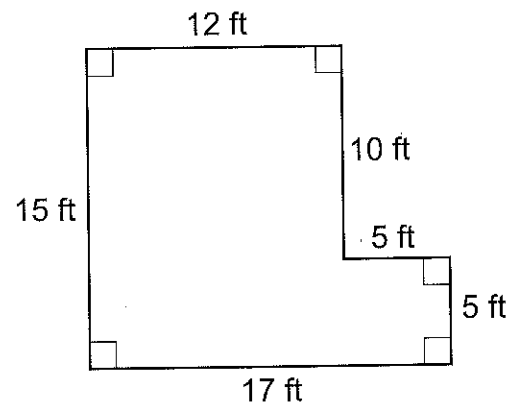
D. **20% Off Sale**

Original Price	Discount
\$29.50	\$2.75
\$32.00	\$3.00
\$38.75	\$3.65
\$42.50	\$4.05

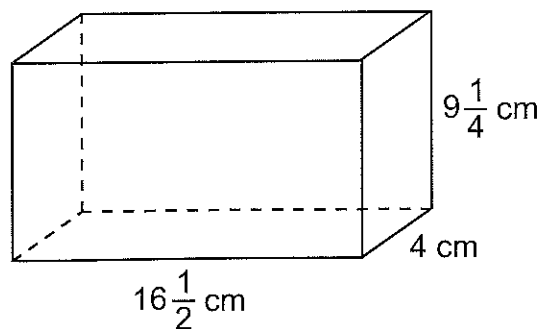
13. A figure is shown below.

What is the area of the figure?

- A. 205 sq ft
 B. 230 sq ft
 C. 265 sq ft
 D. 280 sq ft



14. A rectangular prism is pictured below.



- A. $89 \frac{1}{4} \text{ cm}^3$
- B. $203 \frac{1}{2} \text{ cm}^3$
- C. $576 \frac{1}{8} \text{ cm}^3$
- D. $610 \frac{1}{2} \text{ cm}^3$

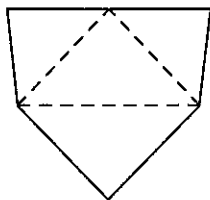
What is the volume of the rectangular prism?

15. A three-dimensional figure is pictured below.

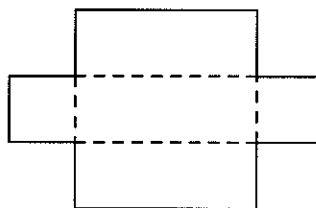


Which net could form the three-dimensional figure when folded along the dashed line segments?

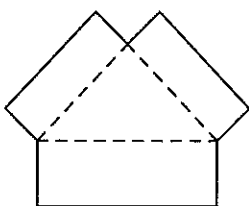
A.



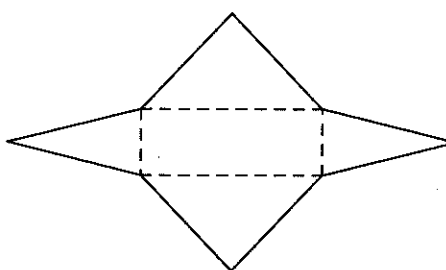
B.



C.



D.



16. A band has an album with 9 songs on it. The lengths of the songs, in seconds, are listed below.

181 134 155 201 265 94 326 298 326

What is the **median** song length, in seconds, of the 9 songs on the band's album?

- A. 201
- B. 220
- C. 265
- D. 326

You may not use a calculator for questions 1–3.

- Divide: $58\frac{1}{3} \div 6\frac{2}{3}$
A. $7\frac{3}{8}$ B. $8\frac{3}{4}$ C. $9\frac{2}{3}$ D. $10\frac{1}{6}$
- Aaron wants to buy 2 concert tickets that cost \$25.50 each. Aaron's grandfather pays him \$4.25 an hour to rake leaves. How many hours does Aaron have to rake leaves to earn the total cost of the tickets?
A. 1.2 B. 6 C. 12 D. 16.5
- Multiply: $2.5 \times 3.5 \times 0.01$
A. 0.0625 B. 0.0875 C. 0.625 D. 0.875
- Emily is making bows using ribbon. She has two pieces of ribbon to use. One is 23 yards long. The other is $4\frac{1}{4}$ yards long. She needs $1\frac{5}{6}$ yards of ribbon to make each bow. What is the **greatest** number of bows Emily can make?
A. 12 B. 14 C. 15 D. 19
- Izara built a fence for her horses. The fence was 210 feet long. She put a fence post in the ground at the start of the fence and another fence post every $3\frac{1}{2}$ feet. Izara paid \$8.50 for each fence post. How much did Izara pay for all the fence posts she used?
A. \$297.50 B. \$518.50 C. \$595.00 D. \$765.00
- Gracie is rewriting the expression $(24 + 40)$ as an integer times the sum of two integers. By factoring out a 2, she knows she can rewrite the expression as 2 times the sum of two integers. What are all the other numbers greater than 2 that Gracie can factor out of $(24 + 40)$ to rewrite the expression as an integer times the sum of two integers?
A. 4, 8
B. 4, 6, 8
C. 3, 5, 6, 10, 12, 20
D. 3, 4, 5, 6, 8, 10, 12, 20

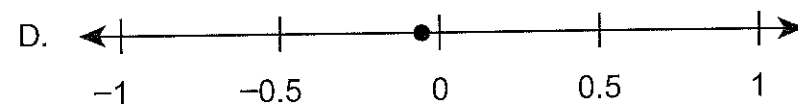
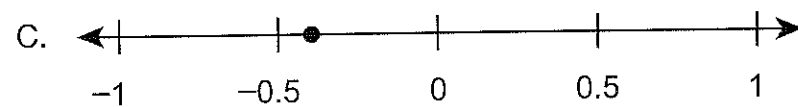
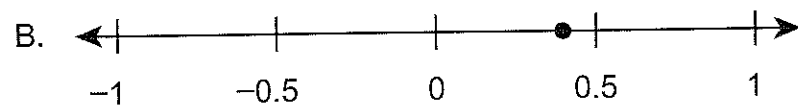
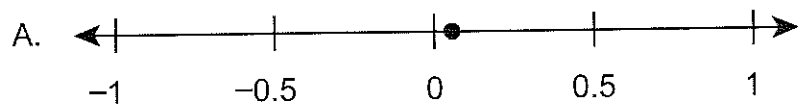
7. An art teacher makes a supply package containing sheets of red paper and sheets of green paper for each student in a class.

- There are 84 sheets of red paper and 96 sheets of green paper available for the packages.
- Each package has the same number of sheets of red paper.
- Each package has the same number of sheets of green paper.
- The maximum number of packages are made.
- There are no sheets of paper remaining.

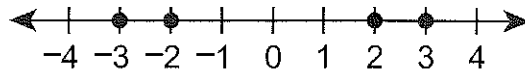
What are the maximum number of packages that can be made and the numbers of sheets of red paper and green paper in each package?

- A. 6 packages with 14 sheets of red paper and 16 sheets of green paper
- B. 12 packages with 7 sheets of red paper and 8 sheets of green paper
- C. 12 packages with 12 sheets of red paper and 12 sheets of green paper
- D. 24 packages with 3 sheets of red paper and 4 sheets of green paper

8. The price of a gallon of gasoline decreased by \$0.04. Which number line shows a point that represents the change in the price of a gallon of gasoline, in dollars?

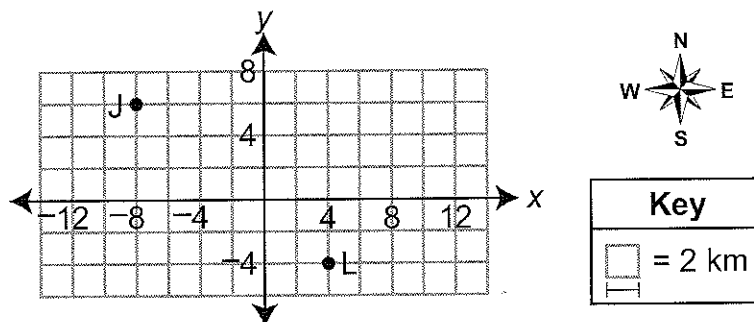


9. Four points are graphed on the number line below.



Which inequality correctly compares numbers that can be represented by the points?

- A. $-3 < |-3| < -2 < |-2|$ C. $-(-3) < -(-2) < -|2| < -|3|$
- B. $|-2| < -2 < |-3| < -3$ D. $-|3| < -|2| < -(-2) < -(-3)$
10. Quincy and Ray keep track of their scores in a game. The person with the greater score is winning the game. Quincy has a score of -70 , and Ray has a score of -60 . Which statement **best** explains who is winning and how many points away from 0 that person is?
- A. Ray is winning and needs to lose 60 points to get to 0.
- B. Ray is winning and needs to gain 60 points to get to 0.
- C. Quincy is winning and needs to lose 70 points to get to 0.
- D. Quincy is winning and needs to gain 70 points to get to 0.
11. On the coordinate grid below, point J shows the starting location of Jake and point L shows the starting location of Lisa.



- Jake walks from his starting location for the same amount of time as Lisa walks from her starting location.
- Jake walks east at an average rate of 4 kilometers per hour.
- Lisa walks west at an average rate of 3 kilometers per hour.
- Jake stops walking when he reaches the point directly north of point L.

Which ordered pair describes the location of Lisa when she stops walking?

- A. $(-12, -4)$
- B. $(-8, -4)$
- C. $(-5, -4)$
- D. $(-3, -4)$

13. The ratio of the number of giraffes to the number of monkeys in a zoo is 2 to 5. Which statement about the giraffes and monkeys could be true?

- A. For every giraffe in the zoo, there are 10 monkeys.
- B. For every 10 giraffes in the zoo, there is 1 monkey.
- C. For every 4 giraffes in the zoo, there are 10 monkeys.
- D. For every 10 giraffes in the zoo, there are 4 monkeys.

12. At a factory, a machine tests 1 out of every 75 items produced for quality. The machine requires a safety check after testing 450 items. The factory produces 303,750 items each month. How many safety checks does the machine require each month?

- A. 6
- B. 9
- C. 50
- D. 54

14. A company is assembling packages of life jackets for boats. The table below shows the number of children's life jackets and the number of adult life jackets in some different packages.

The ratio of the number of children's life jackets to the number of adult life jackets in each package is constant. Based on the information shown in the table, which two ratios could also be included in the table?

Contents of Life Jacket Packages

Number of Children's Size	Number of Adult Size
2	6
4	12
7	21

- A. 28 : 32
- B. 11 : 22
- 31 : 35
- 16 : 32
- C. 13 : 27
- D. 10 : 30
- 22 : 36
- 17 : 51

15. Katie's goal is to read 6 books every 3 months. Based on this goal, how many months will it take Katie to read 24 books?

- A. 4
- B. 8
- C. 12
- D. 18

16. When a farmer harvests chicken eggs, he expects 2% of the eggs to be cracked. How many eggs would the farmer expect to be cracked when harvesting 350 eggs?

- A. 3
- B. 7
- C. 18
- D. 70

17. Kent thinks that $x + x$ and x^2 are equivalent expressions because they each have a value of 4 when $x = 2$. Which statement **best** demonstrates whether Kent is correct?
- A. Kent is correct because $x + x$ is the same as $2x$, and $2x$ is the same as x^2 .
 - B. Kent is correct because the two expressions are also equivalent when $x = 0$.
 - C. Kent is **not** correct because the two expressions do not have the same value at $x = 1$.
 - D. Kent is **not** correct because expressions can never be equivalent if they use different operations.

18. Alex and Payton each have a favorite pancake recipe.

- Alex's recipe uses $7\frac{1}{2}$ cups of flour for 5 batches.
- Payton's recipe uses $\frac{3}{4}$ cup of flour more per batch than Alex's recipe uses per batch.

Which expression can be used to determine the number of cups of flour used to make x batches of Payton's pancake recipe?

- A. $2\frac{1}{4}x$
 - B. $8\frac{1}{4}x$
 - C. $1\frac{1}{2}x + \frac{3}{4}$
 - D. $7\frac{1}{2}x + \frac{3}{4}$
19. This soccer season, Gavin scored 9 fewer than 3 times the number of goals that Rico scored. Rico scored 12 goals. The value of which expression is equivalent to the number of goals Gavin scored this soccer season?
- A. $3(4 - 3)$
 - B. $3(12 - 9)$
 - C. $9(4 - 1)$
 - D. $9(36 - 1)$
20. Jenae goes to the store to buy a jacket. The store is having a sale for 30% off the original price of the jackets. Jenae also has a \$10-off coupon she will use to buy the jacket. The expression below can be used to find her final price for a jacket with an original price of p dollars.

$$0.7p - 10$$

The jacket Jenae decides to buy has an original price of $p = \$87.99$. What is the final price of the jacket Jenae is buying?

- A. \$51.59
- B. \$54.59
- C. \$71.59
- D. \$84.99

21. Each weekday, a factory produces 16 truckloads of canned corn and 12 truckloads of canned peas. The expression $5(16 + 12)$ represents the total number of cans produced each week by the factory. Which expression also represents the total number of cans produced each week by the factory?
- A. $21 + 12$ C. $80 + 12$
 B. $21 + 17$ D. $80 + 60$
22. Mrs. Seager's daughter is y years old. Mrs. Seager's age, in years, can be represented by the expression $6y - 4$. Which expression also represents Mrs. Seager's age, in years?
- A. $2(3y - 4)$ C. $3(2y - 1)$
 B. $2(3y - 2)$ D. $3(2y - 4)$
23. Which expression uses exactly three terms and is equivalent to $6(2 + x + x + y)$?
- A. $8 + 8x + 7y$ C. $8 + 6x + 6x + 6y$
 B. $12 + 12x + 6y$ D. $12 + 6x + 6x + 6y$
24. Mr. Aarav paid a total of \$588 to stay in a hotel and park his car for 3 nights. Each night, the hotel charged Mr. Aarav h dollars for a room and \$15 for parking. The equation shown below represents the total amount, in dollars, Mr. Aarav paid for the 3 nights.

$$3(h + 15) = 588$$

How much was Mr. Aarav charged for the room for 1 night?

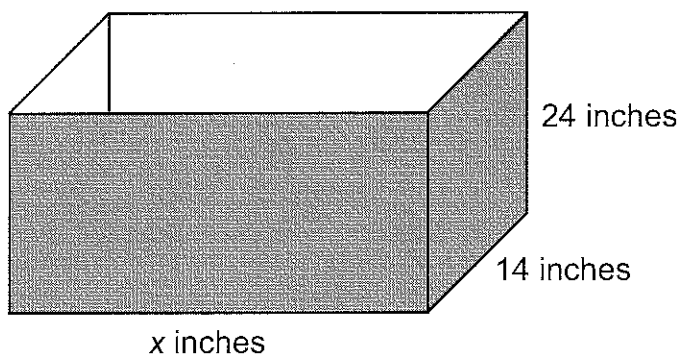
- A. \$181 C. \$201
 B. \$191 D. \$211
25. Michael has \$68. Craig has \$24 less than Michael has. Michael spends \$20 on a new hat. The solution of which equation represents the amount of money (x), in dollars, Craig has after Michael buys the hat?
- A. $x + 4 = 48$ C. $x + 20 = 44$
 B. $x + 4 = 68$ D. $x + 24 = 48$
26. Sergei knows the bicycle he wants to buy will cost more than \$84.00. He has already saved \$26.75 for the bicycle. His aunt has given him \$20.00 to use to buy the bicycle. Which inequality describes all of the additional amounts of money (m), in dollars, that Sergei could save to be able to buy the bicycle?
- A. $m > 37.25$
 B. $m > 46.75$
 C. $m > 57.25$
 D. $m > 84.00$

27. A relationship is described below.

For every 6 inches of border used around a bulletin board, 2 pushpins are used.

Which statement about the dependent variable in the relationship is true?

- A. The length of border used is the dependent variable because it is determined by the number of pushpins used.
 - B. The length of border used is the dependent variable because it is not determined by the number of pushpins used.
 - C. The number of pushpins used is the dependent variable because it is determined by the length of border used.
 - D. The number of pushpins used is the dependent variable because it is not determined by the length of border used.
28. Carlos makes wooden boxes without tops to use as flower planters. Each wooden box has a width of 14 inches and a height of 24 inches. The length of the box (x) varies depending on the types of flowers Carlos will plant. A picture of a wooden box is shown below.



Which equation can be used to find the surface area (y), in square inches, of a wooden box that has a length of x inches?

- A. $y = 38 + x$
 - B. $y = 336x$
 - C. $y = 672 + 62x$
 - D. $y = 672 + 76x$
29. The table below shows the relationship between the number of buses used on a field trip and the maximum number of riders.

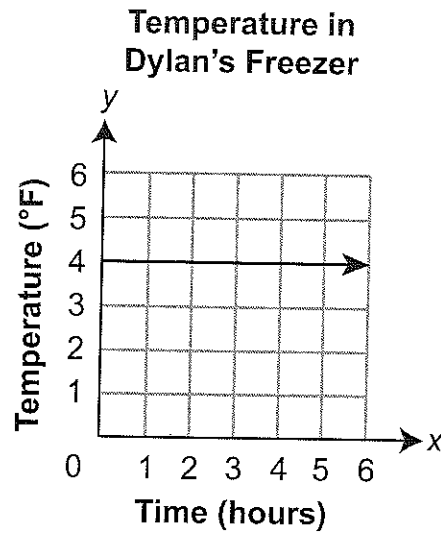
Field Trip Buses

Number of Buses (b)	Maximum Number of Riders (r)
3	120
4	160
5	200
6	240

- A. $r = b + 40$
- B. $r = 3b + 120$
- C. $r = 40b$
- D. $r = 117b$

Which equation describes the relationship shown in the table?

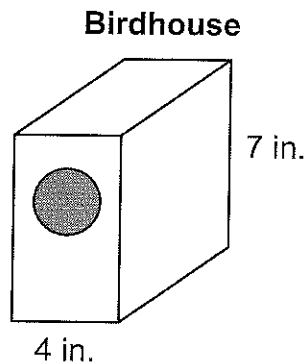
30. The temperature in Dylan's freezer, in degrees Fahrenheit ($^{\circ}\text{F}$), over several hours in an afternoon is shown in the graph below.



- A. $x = 4$
 B. $y = 4$
 C. $x = y + 4$
 D. $y = x + 4$

Which equation can be used to determine the temperature, in degrees Fahrenheit, of Dylan's freezer?

31. A birdhouse is shaped like a rectangular prism. A circular hole is cut out of the front of the birdhouse for the entrance, as represented in the picture below.

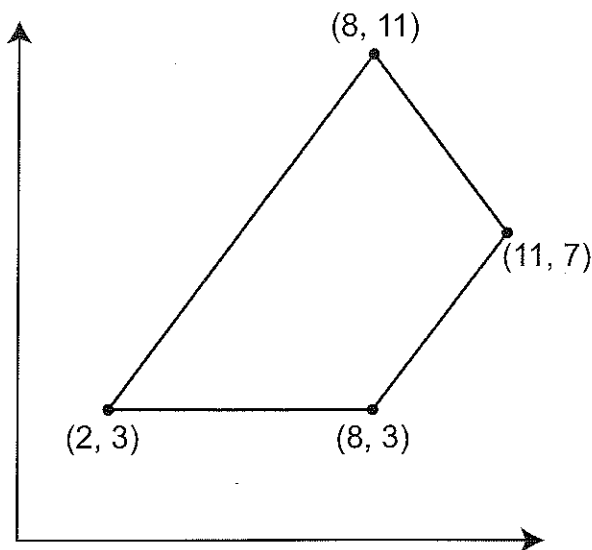


- A. 156
 B. 159
 C. 161
 D. 166

- The volume of the birdhouse is 140 cubic inches.
- The hole has an area that is $\frac{1}{4}$ the area of the top of the birdhouse.

Alicia paints the outside of the birdhouse. How many square inches does Alicia paint?

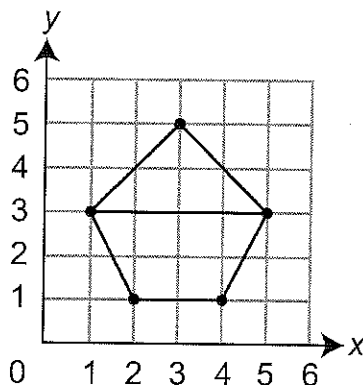
32. The coordinates of the vertices of a quadrilateral are given below.



- A. 24 square units
- B. 36 square units
- C. 48 square units
- D. 72 square units

What is the area, in square units, of the quadrilateral?

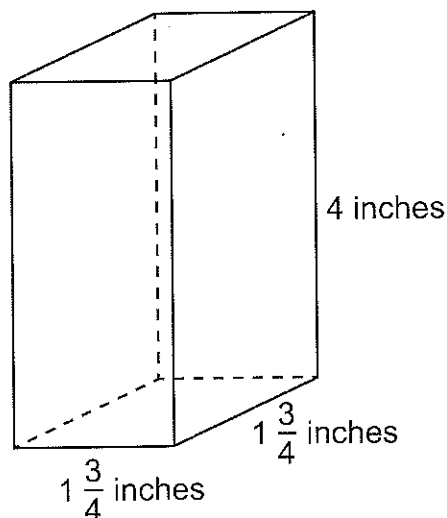
33. A triangle and a trapezoid are graphed on the coordinate plane shown below.



- A. 10
- B. 14
- C. 16
- D. 20

What is the combined area, in square units, of the two shapes?

34. Jamal keeps different colors of beads in containers shaped like the one shown below.

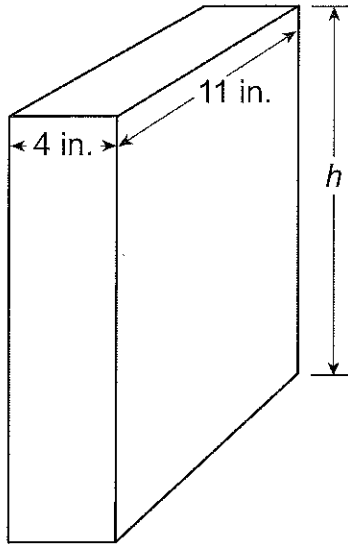


- A. $4\frac{9}{16}$
- B. $7\frac{1}{2}$
- C. $12\frac{1}{4}$
- D. 14

What is the volume, in cubic inches, of one of these containers?

35. Phil is making a number cube out of cardboard. He traces one face of the number cube onto a coordinate grid. The coordinates of two opposite vertices of the face are (4, 8) and (12, 16). What is the surface area, in square units, of Phil's entire number cube?
- A. 48 B. 64 C. 384 D. 512

36. Neelah received a package in the shape of a rectangular prism as shown below.



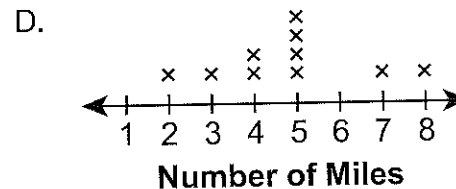
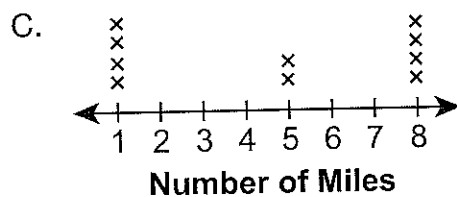
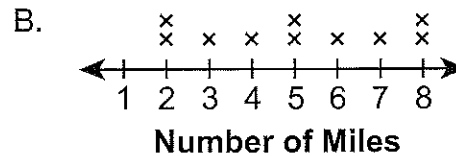
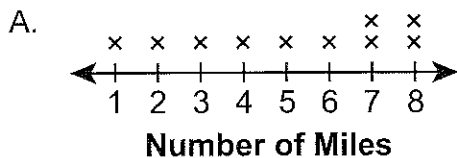
- A. 299
B. 418
C. 510
D. 598

The volume of the package is 748 cubic inches. The equation $4 \times 11 \times h = 748$ can be used to find the height (h), in inches, of the package. What is the surface area, in square inches, of Neelah's package?

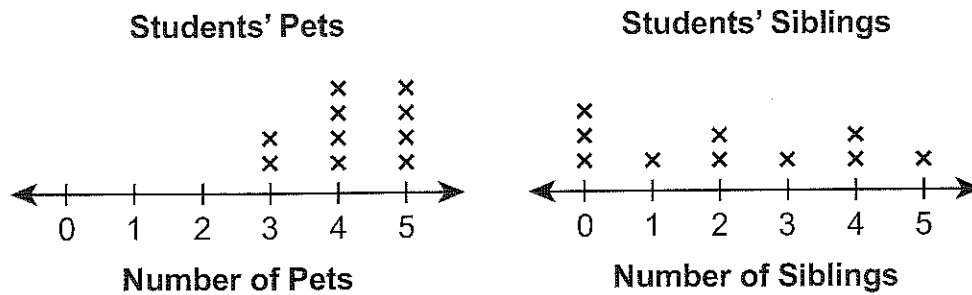
37. Coach Jansen records the number of miles each of his 10 students ran last week. Some information about the numbers of miles is listed below.

- The **mean** number of miles run by the students is 5.
- The **median** number of miles run by the students is also 5.

Which line plot could show the numbers of miles the 10 students ran last week?



38. Matthew asked 10 students how many pets and how many siblings each has. The line plots below show his data.

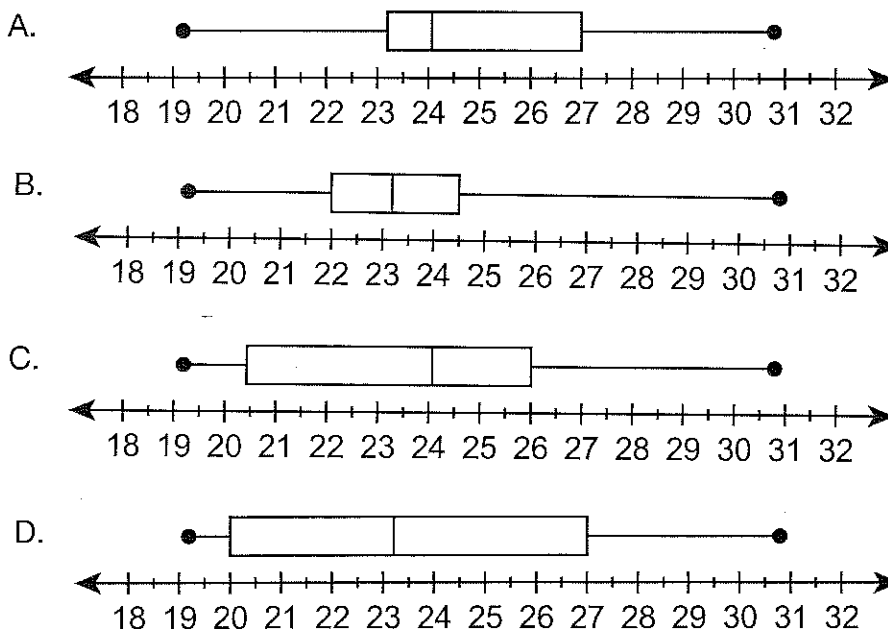


Which statement correctly describes Matthew's data?

- A. The median number of pets the students have is less than the median number of siblings the students have.
 - B. There is less variability in the number of pets the students have than in the number of siblings the students have.
 - C. The range in the number of siblings the students have is less than the range in the number of pets the students have.
 - D. The mean absolute deviation of the number of siblings the students have is less than the mean absolute deviation of the number of pets the students have.
39. A data set contains eight numbers. Only four of the numbers are known. When the eight numbers are ordered from **least** to **greatest**, the unknown numbers can be placed into the blanks of the ordered list shown below.

19.2 _____ _____ 20.4 26.0 _____ _____ 30.8

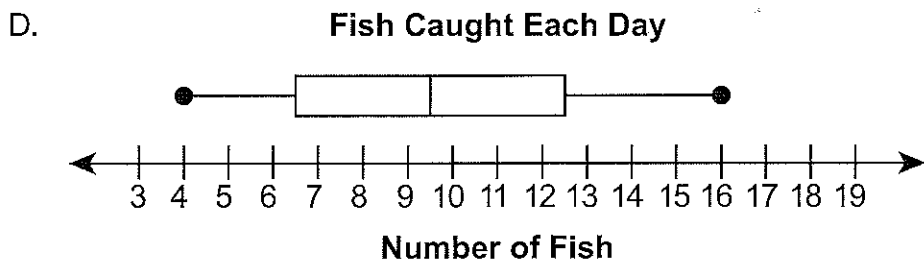
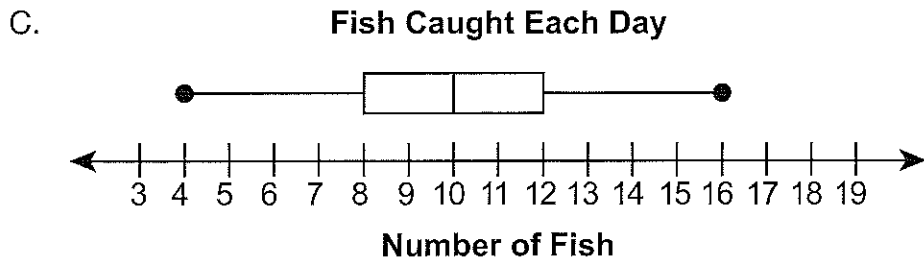
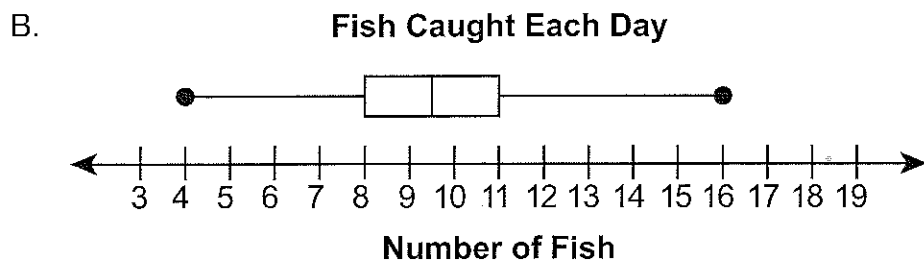
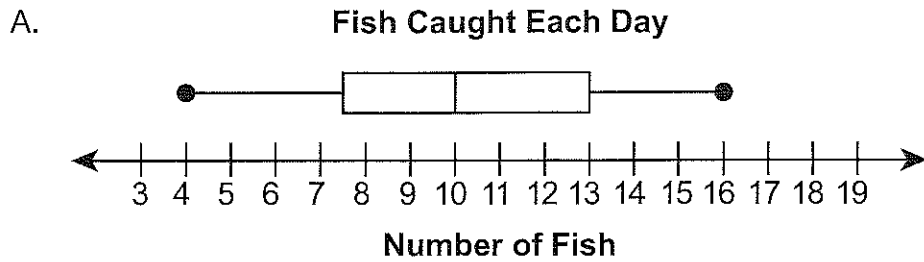
Which box-and-whisker plot could represent the data set?



40. Yvonne and her family went on a 10-day fishing trip. The data set below shows the number of fish they caught each day.

14 4 8 16 7 12 10 11 10 9

Which box-and-whisker plot represents the number of fish Yvonne and her family caught on their fishing trip?



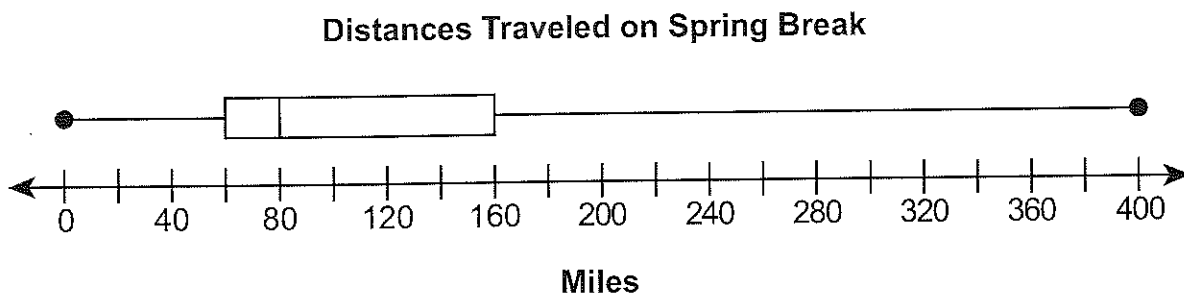
41. The heights, rounded to the nearest foot, of the trees in a park are listed below.

23 13 8 52 26 42 48 52

What is the **median** of the tree heights?

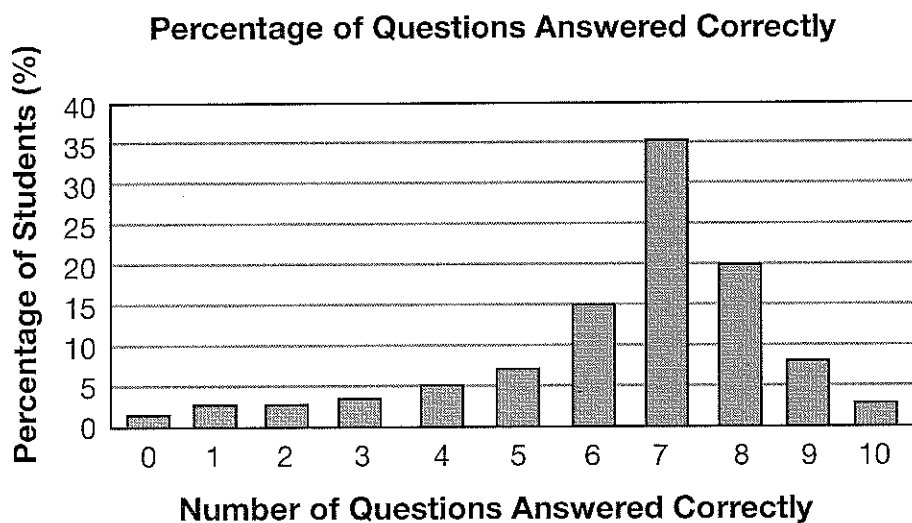
- A. 33 feet
- B. 34 feet
- C. 39 feet
- D. 44 feet

43. Enrique and his classmates recorded the distances, in miles, they each traveled for spring break. Their data is shown in the box-and-whisker plot below.



Which statement **must** be true?

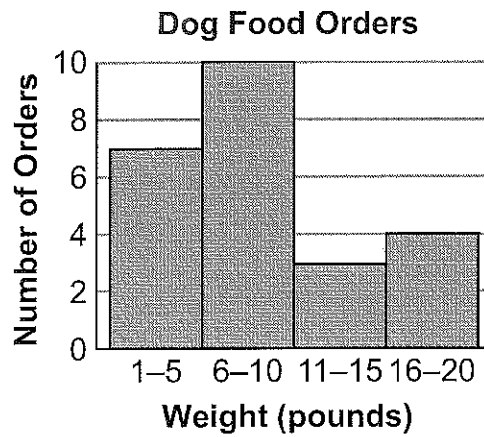
- A. The median distance traveled is 80 miles.
 - B. The median distance traveled is 200 miles.
 - C. The mean distance traveled is 80 miles.
 - D. The mean distance traveled is 200 miles.
44. The bar graph below shows how many questions various percentages of students in a class answered correctly on a recent 10-question quiz.



Which statement **best** describes the data displayed in the bar graph?

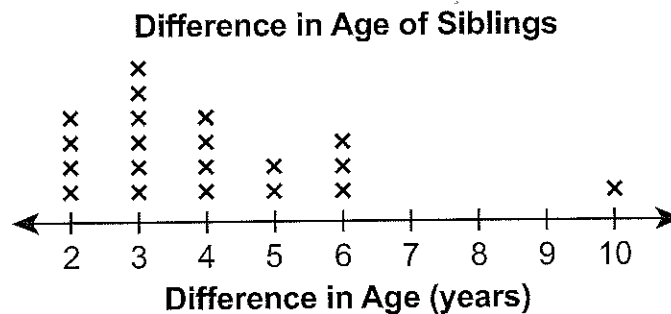
- A. Half the class answered from 0 to 5 of the 10 questions correctly.
- B. Most of the students answered approximately 35% of the quiz questions correctly.
- C. The number of quiz questions answered correctly is clustered around 7 out of 10.
- D. The percentage of students increases as the number of questions answered correctly increases.

45. The histogram below represents the weights, rounded to the nearest pound, of several orders of dog food.



Which statement **best** describes the weights of the orders represented in the histogram?

- A. The orders cluster near 20 pounds.
 - B. The orders are symmetrical about 8 pounds.
 - C. There is a gap in the orders from 11 to 15 pounds.
 - D. There is a peak in the orders from 6 to 10 pounds.
42. Malik interviewed 20 people who each have just one sibling. He asked them what the difference in age, in years, is between them and their siblings. The line plot below shows Malik's data.



Malik removes the point representing the 10-year age difference from his data. Which measure changes the **least** in value when this point is removed from Malik's data?

- A. mean
- B. median
- C. mode
- D. range