

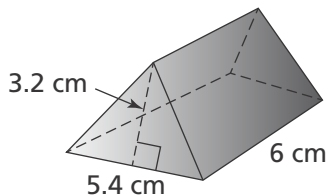
1. Andrew has one book that is $2\frac{3}{7}$ inches thick and a second book that is 3.56 inches thick. If he stacks the books, about how tall will the stack be? Round to the nearest hundredth.

- (A) 5.93 inches
- (B) 5.98 inches
- (C) 5.99 inches
- (D) 6 inches

2. Jeremiah makes a recipe that calls for $1\frac{1}{2}$ cups of flour and $\frac{3}{4}$ stick of butter. If Jeremiah uses 3 sticks of butter, how many cups of flour will he need?

- (A) 2 cups
- (B) $3\frac{3}{8}$ cups
- (C) $4\frac{1}{2}$ cups
- (D) 6 cups

3. What is the volume of the triangular prism?



- (A) 8.64 cm^3
- (B) 17.28 cm^3
- (C) 51.84 cm^3
- (D) 103.68 cm^3

4. Rebekah bought g gallons of paint for \$12.85 per gallon and b brushes for \$4.79 each. Which expression can be used to determine the total amount Rebekah spent on paint and brushes?

- (A) $4.79b + 12.85g$
- (B) $4.79g + 12.85b$
- (C) $12.85b + 4.79g$
- (D) $12.85g - 4.79b$

5. At a wedding reception, an equal number of guests were seated at 12 round tables. The 13 people in the wedding party were seated at a rectangular table. There were 121 people at the reception altogether. Which equation could you use to find the number of guests, n , seated at each round table?

- (A) $12 + 13n = 121$
- (B) $12n + 13 = 121$
- (C) $121 = 12n - 13$
- (D) $121 = 13n - 12$

6. The world record for the greatest temperature range recorded in one day occurred in Browning, Montana, in 1916. The temperature fell from 44°F to -56°F . What was the temperature change that day?

- (A) -100°F
- (B) -12°F
- (C) 12°F
- (D) 100°F

7. A 12-section game wheel has a 25% probability that the pointer will land on green. What is the likelihood that the pointer will land on green?
- (A) It is certain the pointer will land on green.
 - (B) It is neither likely nor unlikely the pointer will land on green.
 - (C) It is likely the pointer will land on green.
 - (D) It is unlikely the pointer will land on green.

8. How many triangles can be formed from two given angle measures and the length of their included side?

- (A) None
- (B) One
- (C) Two
- (D) Infinite number

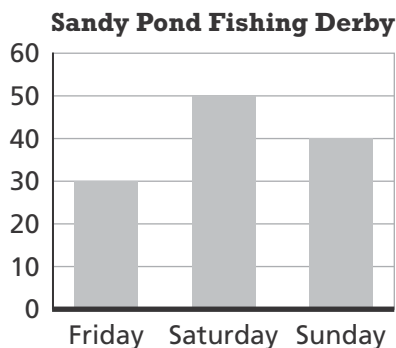
9. A national survey of middle-school students asks which subject is most challenging. Which of these samples is a representative sample?

- (A) 372 sixth-graders in a certain town
- (B) 972 seventh-graders in a certain county
- (C) 619 eighth-graders in different states
- (D) 400 students from various states, representing different grades, 6–8

10. The manager of a food court estimates that he needs 7 pretzels for every 20 people who attend a hockey game. What constant of proportionality relates the number of pretzels to people?

- (A) 0.35
- (B) 2.86
- (C) 35
- (D) 140

11. A fishing derby was held over the Fourth of July weekend. What is the percent change in fish caught from Saturday to Sunday?



- (A) 20% increase
- (B) 10% increase
- (C) 20% decrease
- (D) 10% decrease

12. Which expression is equivalent to $\frac{1}{2}x + (-7) - 2\frac{1}{4}x - (-2)$?

- (A) $-1\frac{3}{4}x - 5$
- (B) $1\frac{3}{4}x - 9$
- (C) $3\frac{3}{4}x - 9$
- (D) $3\frac{3}{4}x - 7$

13. Rayne sold 3 desks at the local trade show. He paid \$4.00 to rent the booth. He gave half of his revenue to the carpenter and was left with \$185.50. At what price did Rayne sell each desk?

- (A) \$75.00
- (B) \$371.00
- (C) \$125.00
- (D) \$185.50

14. Use the table from a random survey about the preferred service for streaming movies. Out of 750 people, how many would you expect to prefer Company B?

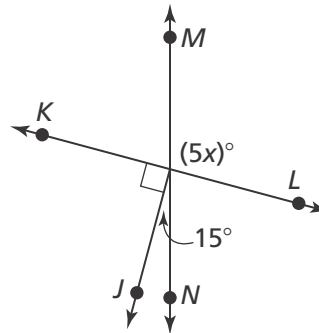
| Service | Number of People |
|-----------|------------------|
| Company A | 75 |
| Company B | 32 |
| Company C | 18 |

- (A) 192
- (B) 240
- (C) 510
- (D) 558

15. A bag holds 12 red marbles, 11 green marbles, 17 blue marbles, and 5 yellow marbles. What is the probability that you will **NOT** choose a blue marble?

- (A) $\frac{5}{45}$
- (B) $\frac{11}{45}$
- (C) $\frac{12}{45}$
- (D) $\frac{28}{45}$

16. What is the value of x ?

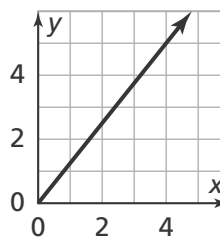


- (A) 15
- (B) 21
- (C) 26
- (D) 105

17. Find the quotient: $-\frac{10}{19} \div \left(-\frac{5}{7}\right)$.

- (A) $-\frac{70}{95}$
- (B) $-\frac{14}{19}$
- (C) $\frac{14}{19}$
- (D) $\frac{70}{95}$

18. What is the constant of proportionality shown on the graph?



- (A) 0.80
- (B) 1.25
- (C) 4
- (D) 5

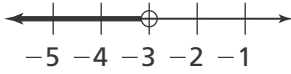
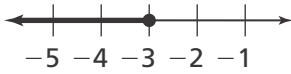
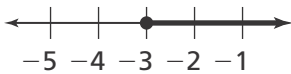
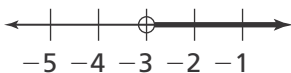
19. Sonya buys four pairs of shoes on sale for buy one, get one 50% off. The sales tax is 6.5%. If the original price for each pair of shoes was \$35, how much does Sonya pay for the four pairs altogether?

- (A) \$74.55
- (B) \$105.00
- (C) \$111.83
- (D) \$149.10

20. A gardener is installing fence around his garden. Let x represent the width of the garden, in feet. The perimeter of the garden is $8x + 8$. Which expression represents the length of the garden?

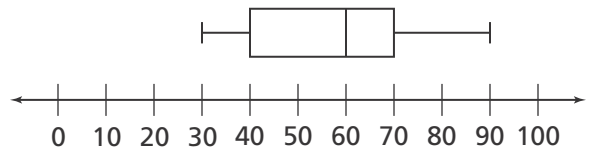
- (A) $2x + 2$
- (B) $3x + 4$
- (C) $6x + 8$
- (D) $8x + 8 - 2x$

21. Solve the inequality $-7x > 21$. What is the graph of the solution?

- (A) 
- (B) 
- (C) 
- (D) 

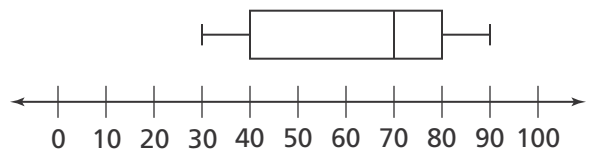
22. Which is the interquartile range for the city that has the greater variability in temperature?

City A



Degrees Fahrenheit

City B



Degrees Fahrenheit

- (A) 10
- (B) 20
- (C) 30
- (D) 40

23. Kayla rolls two number cubes numbered 1 to 6. What is the probability that the sum of the numbers rolled will be 5?

- (A) $\frac{1}{19}$
- (B) $\frac{1}{9}$
- (C) $\frac{1}{8}$
- (D) $\frac{1}{6}$

24. A cosmetics company tested a new lotion. Of the 2,500 people tested, 15 had an allergic reaction. What percent of the people tested did not have an allergic reaction to the new lotion?

- (A) 0.006%
- (B) 0.06%
- (C) 99.4%
- (D) 99.994%

25. Major League Baseball's fastest recorded pitch is 105 miles per hour. The distance between the pitcher's mound and home plate is 60 feet, 6 inches. How long did it take the ball to travel from the pitcher to the batter?

- (A) About 0.4 second
- (B) About 0.7 second
- (C) About 4 seconds
- (D) About 7 seconds

26. Maria needs to buy cat food. At Save Rite, cat food costs \$5.25 for 3 cans. Spend Less offers cat food at \$7.50 for 5 cans. Maria buys 15 cans from the store with the lowest price. How much did she pay?

- (A) \$8.57
- (B) \$10.00
- (C) \$22.50
- (D) \$26.25

27. Malik borrowed \$8,000 to buy a new boat. He will pay off the loan after 4 years by paying back the principal plus 6.5% simple interest. How much will Malik pay back altogether?

- (A) \$520
- (B) \$2,080
- (C) \$8,000
- (D) \$10,080

28. Find the sum.

$$(-7b + 8c) - (12a + 14) + (5a + 5b)$$

- (A) $-7a + 12b + 8c + 14$
- (B) $-7a - 2b + 8c - 14$
- (C) $17a - 2b + 8c + 14$
- (D) $17a - 2b + 8c - 14$

29. A store sells three varieties of cheese—cheddar, Gouda, and Swiss. Each variety of cheese is available in two different styles—shredded or sliced. If Ryan buys 120 random cheeses for a large work party, about how many of them would you expect to be shredded Gouda?

- (A) 60
- (B) 40
- (C) 24
- (D) 20

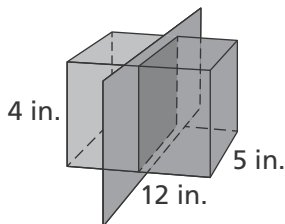
30. The low temperatures in two cities are being compared. In City 1, the range in temperature is 20°F and the IQR is 7°F . In City 2, the range in temperature is 15°F and the IQR is 7°F . What might you conclude about the cities based on the ranges and interquartile ranges?

- (A) The weather patterns in City 1 and City 2 are equally consistent.
- (B) The weather pattern in City 2 is more consistent than the weather pattern in City 1.
- (C) The weather pattern in City 1 is more consistent than the weather pattern in City 2.
- (D) There is not enough information to make a conclusion.

31. For Spirit Day, each 8th-grade homeroom designs a unique two-color T-shirt. They get to choose from the colors red (R), blue (B), green (G), violet (V), and orange (O). Each T-shirt is a solid color with a different color used for the student's name. What is the probability that a homeroom will have a T-shirt with a combination of blue and violet?

- (A) $P(B \text{ and } V) = 10\%$
- (B) $P(B \text{ and } V) = 20\%$
- (C) $P(B \text{ and } V) = 30\%$
- (D) $P(B \text{ and } V) = 40\%$

32. What are the dimensions of the vertical cross section shown on this right rectangular prism?



- (A) 5 in. \times 12 in.
- (B) 4 in. \times 12 in.
- (C) 5 in. \times 4 in.
- (D) 12 in. \times 5 in.

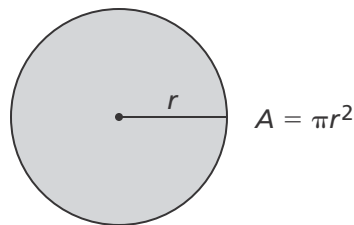
33. Which inequality represents the following situation: $\frac{3}{5}$ times 5 less than a number is no more than 27?

- (A) $\frac{3}{5}(x - 5) \geq 27$
- (B) $\frac{3}{5}x - 5 \leq 27$
- (C) $\frac{3}{5}(5 - x) \geq 27$
- (D) $\frac{3}{5}(x - 5) \leq 27$

34. Charlie bought a car for 5% off the selling price of \$7,200. The sales tax for his state is 3.4%. How much is the sales tax?

- (A) \$232.56
- (B) \$244.80
- (C) \$257.04
- (D) \$347.76

35. The circumference of a circle is 6π inches. What is the area of the circle?



- (A) $3\pi \text{ in.}^2$
- (B) $9\pi \text{ in.}^2$
- (C) $12\pi \text{ in.}^2$
- (D) $36\pi \text{ in.}^2$

36. A company owns two manufacturing plants with daily production levels of $8x + 17$ widgets and $5x - 7$ widgets, where x represents a minimum quantity. How many more items does the first plant produce daily than the second plant?

- (A) $13x + 10$ widgets
- (B) $3x + 10$ widgets
- (C) $3x + 24$ widgets
- (D) $13x - 10$ widgets