**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Score out of 65:** /65

Summer Math Packet: 6th to 7th (for school year 2014-2015)

Which pattern folds into the pyramid above?

|  |  |  |  |
| --- | --- | --- | --- |
| **W.** | **X.** | **Y.** | **Z.** |

|  |  |  |
| --- | --- | --- |
|  | **A.** | X |

|  |  |  |
| --- | --- | --- |
|  | **B.** | Y |

|  |  |  |
| --- | --- | --- |
|  | **C.** | W |

|  |  |  |
| --- | --- | --- |
|  | **D.** | Z |

**2.**

Note: Figure is not drawn to scale.

If *x* = 14 units and *h* = 6 units, then what is the area of the triangle shown above?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 18 square units |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 126 square units |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 84 square units |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 42 square units |

**3.**

8 × (7 + 5)

Which of the following describes (7 + 5) in the expression above?

|  |  |  |
| --- | --- | --- |
|  | **A.** | quotient |

|  |  |  |
| --- | --- | --- |
|  | **B.** | difference |

|  |  |  |
| --- | --- | --- |
|  | **C.** | product |

|  |  |  |
| --- | --- | --- |
|  | **D.** | sum |

**4.** Over the past month, a hairstylist has had 42 female clients and 18 male clients. What is the ratio of male clients to female clients for this hairstylist?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 7:10 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 7:3 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 3:7 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 3:10 |

**5.** Molly made bags of cookies for the bake sale. She used red bags (*r*) for chocolate chip cookies and blue bags (*b*) for sugar cookies. She put four chocolate chip cookies in each red bag and five sugar cookies in each blue bag. Which expression shows the total number of cookies Molly put in bags?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 4*r* ÷ 5*b* |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 4*r* + 5*b* |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 4*r* × 5*b* |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 5*b* - 4*r* |

**6.** What is the absolute value of the number indicated on the number line below?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | | | | | |
|  | -2 | -1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |  |

|  |  |  |
| --- | --- | --- |
|  | **A.** | 9 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 7 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 8 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | -8 |

**7.** What is the median of the following set of numbers?

125, 132, 147, 125, 108, 163, 157, 185, 157, 170

|  |  |  |
| --- | --- | --- |
|  | **A.** | 146.9 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 77 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 157 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 152 |

**8.** Evaluate the expression below at *x* = 5.

|  |  |  |
| --- | --- | --- |
|  | **A.** | 3,125 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 20 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 625 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 635 |

**9.** Which algebraic expression is equivalent to the expression below?

7(3*x* + 5)

|  |  |  |
| --- | --- | --- |
|  | **A.** | 7*x* + 8 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 56*x* |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 21*x* + 35 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 21*x* + 5 |

**10.** Look at the relationship between *a* and *b*.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *a* | 2 | 6 | 10 | 14 |
| *b* | 18 | 54 | 90 | 126 |

Which equation below describes the relationship between *a* and *b*?

|  |  |  |
| --- | --- | --- |
|  | **A.** | *b* = 9 × *a* |

|  |  |  |
| --- | --- | --- |
|  | **B.** | *b* = 20 - *a* |

|  |  |  |
| --- | --- | --- |
|  | **C.** | *b* = 36 ÷ *a* |

|  |  |  |
| --- | --- | --- |
|  | **D.** | *b* = 16 + *a* |

**11.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | | | | | |
|  | -5 |  |  |  | -4 |  |  |  | -3 |  |  |  | -2 |  |

At what position on the number line is the red dot located?

|  |  |  |
| --- | --- | --- |
|  | **A.** | -4.25 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | -5.5 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | -5.25 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | -4.75 |

**12.** What is the greatest common factor (GCF) of 16 and 18?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 16 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 144 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 4 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 2 |

**13.** Convert 7 feet to inches.

|  |  |  |
| --- | --- | --- |
|  | **A.** | 21 inches |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 112 inches |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 700 inches |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 84 inches |

**14.** Which expression shows *four times nine to the sixth*?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 4 × 9 × 6 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 49 × 6 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 4 × 96 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 49 × 6 |

**15.**

Which of the points below, when plotted on the graph, would connect with the other two points to form a right triangle?

|  |  |  |
| --- | --- | --- |
|  | **A.** | (1, 0) |

|  |  |  |
| --- | --- | --- |
|  | **B.** | (2, 9) |

|  |  |  |
| --- | --- | --- |
|  | **C.** | (9, 1) |

|  |  |  |
| --- | --- | --- |
|  | **D.** | (7, 7) |

**16.** What is the greatest common factor (GCF) of 84 and 96?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 6 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 21 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 32 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 12 |

**17.** What is the absolute value of the number indicated on the number line below?

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | | | | | |
|  | -20 | -19 | -18 | -17 | -16 | -15 | -14 | -13 | -12 | -11 | -10 | -9 | -8 |  |

|  |  |  |
| --- | --- | --- |
|  | **A.** | 14 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | -14 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | -15 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 15 |

**18.**

What are the coordinates of the point labeled L?

|  |  |  |
| --- | --- | --- |
|  | **A.** | (9, 2) |

|  |  |  |
| --- | --- | --- |
|  | **B.** | (-9, -2) |

|  |  |  |
| --- | --- | --- |
|  | **C.** | (-2, -9) |

|  |  |  |
| --- | --- | --- |
|  | **D.** | (2, 9) |

**19.** From the set {1, 5, 7}, use substitution to determine which value of *x* makes the equation true.

14*x* + 6 = 76

|  |  |  |
| --- | --- | --- |
|  | **A.** | 7 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 5 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 1 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | none of these |

**20.** A bagel shop sells coffee in a container shaped like a rectangular prism. A graphic designer who works for the bagel shop drew the net below to create a design for the container.

Note: Figure is not drawn to scale.

What is the surface area of the container?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 1,228 sq cm |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 1,636 sq cm |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 818 sq cm |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 219 sq cm |

**21.**

Find the coordinates of Z.

|  |  |  |
| --- | --- | --- |
|  | **A.** | (8.5, 9.5) |

|  |  |  |
| --- | --- | --- |
|  | **B.** | (8.5, 8.5) |

|  |  |  |
| --- | --- | --- |
|  | **C.** | (9.5, 8.5) |

|  |  |  |
| --- | --- | --- |
|  | **D.** | (7.5, 9.5) |

**22.** In a probability experiment, Craig rolled a six-sided die 62 times. The die landed on a number greater than three 32 times. What is the ratio of rolls greater than three to rolls less than or equal to three?

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**23.** Simplify the following expression.

5.9 + 0.021

|  |  |  |
| --- | --- | --- |
|  | **A.** | 59.021 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 6.11 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 5.921 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 59.21 |

**24.**

Note: Figure is not drawn to scale.

If *x* = 14 units and *h* = 12 units, then what is the area of the rhombus pictured above?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 28 square units |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 56 square units |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 168 square units |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 196 square units |

**25.** What is 65% of 40?

**A.** 32.5 **B.** 29.25 **C.** 35.75 **D.** 26

**26.** Stephanie is buying cans of soup. If each can of soup costs $1.04, which expression shows the cost of *c* cans of soup?

|  |  |  |
| --- | --- | --- |
|  | **A.** | $1.04 × *c* |

|  |  |  |
| --- | --- | --- |
|  | **B.** | $1.04 - *c* |

|  |  |  |
| --- | --- | --- |
|  | **C.** | $1.04 ÷ *c* |

|  |  |  |
| --- | --- | --- |
|  | **D.** | $1.04 + *c* |

**27.** Which algebraic expression is equivalent to the expression below?

9(2*x* - 5)

|  |  |  |
| --- | --- | --- |
|  | **A.** | 9*x* - 4 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 18*x* - 45 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 18*x* + 45 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 9*x* - 7 |

**28.** On a coordinate plane, how are the locations of the points (6, 6) and (-6, 6) related?

|  |  |  |
| --- | --- | --- |
|  | **A.** | reflection across both axes |

|  |  |  |
| --- | --- | --- |
|  | **B.** | locations unrelated |

|  |  |  |
| --- | --- | --- |
|  | **C.** | reflection across the *y*-axis |

|  |  |  |
| --- | --- | --- |
|  | **D.** | reflection across the *x*-axis |

**29.** Which list orders integers from least to greatest?

|  |  |  |
| --- | --- | --- |
|  | **A.** | -36, -35, -32, -29 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | -29, -32, -35, -36 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | -36, -29, -32, -35 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | -35, -36, -32, -29 |

**30.** Karen is moving into a new house. She has a lot of books that she wants to pack in small moving boxes. The dimensions of one of these moving boxes is shown below.

\*Picture not drawn to scale

What is the volume of the small moving box (Answer choices on next page)?

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**31.** From the set {56, 112, 224}, use substitution to determine which value of *x* makes the equation true.

*x* ÷ 4 = 56

|  |  |  |
| --- | --- | --- |
|  | **A.** | 56 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 112 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 224 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | none of these |

**32.** Which value for *x* makes the sentence true?

34*x* = 850

|  |  |  |
| --- | --- | --- |
|  | **A.** | 28,900 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 25 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 884 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 816 |

**33.** Simplify the following expression.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**34.** It takes Carol 30 minutes to drive to work using two roads. She drives 24 mph on a small road for hour. Then she drives 48 mph on a highway for hour. How far does Carol travel to work?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 26 miles |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 12 miles |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 18 miles |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 6 miles |

**35.** Convert 3 yards to inches.

|  |  |  |
| --- | --- | --- |
|  | **A.** | 108 inches |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 72 inches |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 36 inches |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 300 inches |

**36.** Mr. Swanson wants to buy some mugs as gifts on his trip to California. There are three gift shops, and each is offering a different deal.

|  |  |
| --- | --- |
| Bonita's Boutique | 6 mugs for $6.00 |
| Kevin's Gift Shop | 12 mugs for $9.00 |
| Hector's Hodgepodge | 9 mugs for $4.50 |

Which gift shop has the best deal for mugs?

|  |  |  |
| --- | --- | --- |
|  | **A.** | Kevin's Gift Shop |

|  |  |  |
| --- | --- | --- |
|  | **B.** | Both Bonita's Boutique and Hector's Hodgepodge |

|  |  |  |
| --- | --- | --- |
|  | **C.** | Hector's Hodgepodge |

|  |  |  |
| --- | --- | --- |
|  | **D.** | Bonita's Boutique |

**37.**

|  |
| --- |
| Ages |
|  |

The ages of 8 different students in a college math class were used to make the box plot shown above. Which of the following numbers below is the range of the ages (choices on next page)?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 5 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 8 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 3 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 18 |

**38.** The dot plot below shows the number of wings contestants in a wing-eating contest ate.

What is the interquartile range of the data set shown?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 18 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 20 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 3 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 6 |

**39.** What is the opposite of ?

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**40.** Which value for *x* makes the sentence true?

792 + *x* = 1,089

|  |  |  |
| --- | --- | --- |
|  | **A.** | 1,881 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 1,981 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 307 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 297 |

**41.** Which of the following is true given that -5 < -3?

|  |  |  |
| --- | --- | --- |
|  | **A.** | -5 is in the same place as -3 on a horizontal number line |

|  |  |  |
| --- | --- | --- |
|  | **B.** | -5 is to the right of -3 on a horizontal number line |

|  |  |  |
| --- | --- | --- |
|  | **C.** | -5 is the opposite of -3 on a horizontal number line |

|  |  |  |
| --- | --- | --- |
|  | **D.** | -5 is to the left of -3 on a horizontal number line |

**42.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | -9 | -8 | -7 | -6 | -5 | -4 | -3 | -2 | -1 | 0 | 1 | 2 | 3 | |

Which inequality is graphed on the number line?

|  |  |  |
| --- | --- | --- |
|  | **A.** | *x* > -4 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | *x* > -4 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | *x* < -4 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | *x* < -4 |

**43.** What is the mean of the following set?

85, 136, 285, 85, 109

|  |  |  |
| --- | --- | --- |
|  | **A.** | 175 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 112.8 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 140 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 147.75 |

**44.** Mrs. Moore has 91 pieces of candy to split among *s* students. Which expression shows how many pieces of candy each student will receive?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 91 + *s* |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 91 ÷ *s* |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 91 - *s* |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 91 × *s* |

**45.** A group of volunteers has been collecting toys to deliver to an orphanage. Over the last 7 days, the volunteers have collected 714 toys. What has been their collection rate, in toys per day?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 102 toys per day |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 99 toys per day |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 101 toys per day |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 104 toys per day |

**46.** Convert 5,000 meters to kilometers.

|  |  |  |
| --- | --- | --- |
|  | **A.** | 5 kilometers |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 50 kilometers |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 500 kilometers |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 5,000 kilometers |

**47.** Convert 260 centimeters to meters.

|  |  |  |
| --- | --- | --- |
|  | **A.** | 2.6 meters |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 0.26 meter |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 260 meters |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 0.0026 meter |

**48.** What is 85% of 30?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 42.5 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 25.5 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 17 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 12.75 |

**49.** From the set {5, 8, 72}, use substitution to determine which value of *x* makes the inequality true.

3*x* < 24

|  |  |  |
| --- | --- | --- |
|  | **A.** | 8 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 72 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | none of these |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 5 |

**50.** The wind chill temperature in Dayton is -9°F, and the wind chill temperature in Trenton is -13°F. Which of the following is true?

|  |  |  |
| --- | --- | --- |
|  | **A.** | Dayton's wind chill temperature < Trenton's wind chill temperature |

|  |  |  |
| --- | --- | --- |
|  | **B.** | Dayton's wind chill temperature = Trenton's wind chill temperature |

|  |  |  |
| --- | --- | --- |
|  | **C.** | Dayton's wind chill temperature > Trenton's wind chill temperature |

|  |  |  |
| --- | --- | --- |
|  | **D.** | Sam's account balance > Wendy's account balance |

**51.**

Which of the following describes in the expression above?

|  |  |  |
| --- | --- | --- |
|  | **A.** | quotient |

|  |  |  |
| --- | --- | --- |
|  | **B.** | difference |

|  |  |  |
| --- | --- | --- |
|  | **C.** | factor |

|  |  |  |
| --- | --- | --- |
|  | **D.** | product |

**52.** Evaluate the expression below at *x* = 4.

|  |  |  |
| --- | --- | --- |
|  | **A.** | 92 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 104 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 89 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 152 |

**53.** Look at the relationship between *a* and *b*.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *a* | 6 | 8 | 10 | 12 |
| *b* | 41 | 39 | 37 | 35 |

Which equation below describes the relationship between *a* and *b*?

|  |  |  |
| --- | --- | --- |
|  | **A.** | *b* = 35 + *a* |

|  |  |  |
| --- | --- | --- |
|  | **B.** | *b* = 47 - *a* |

|  |  |  |
| --- | --- | --- |
|  | **C.** | *b* = 6 × *a* |

|  |  |  |
| --- | --- | --- |
|  | **D.** | *b* = 246 ÷ *a* |

**54.** From the set {8, 15, 18}, use substitution to determine which value of *x* makes the equation true.

83 - 5*x* = 8

|  |  |  |
| --- | --- | --- |
|  | **A.** | 8 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 15 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | none of these |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 18 |

**55.** Simplify the following expression.

76.3 × 0.071

|  |  |  |
| --- | --- | --- |
|  | **A.** | 5.32 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 27,308.6093000000 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 5.341 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 5.4173 |

**56.** Simplify the following expression.

82.522 - 82.47

|  |  |  |
| --- | --- | --- |
|  | **A.** | 0.053 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 0.529 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 0.52 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 0.052 |

**57.** The Sleep Institute uses a machine to monitor the breathing patterns in patients while they are sleeping. The following graph shows the number of breaths taken by a patient in one hour.

Based on the graph, how many total breaths did Patient A take in 30 minutes?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 180 breaths |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 240 breaths |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 300 breaths |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 360 breaths |

**58.**

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**59.**

480 ÷ 16 = ?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 30 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 32 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 464 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 31 |

**60.**

2 × 5 + 9(3 + 12)

Which of the following describes 9 in the expression above?

|  |  |  |
| --- | --- | --- |
|  | **A.** | factor |

|  |  |  |
| --- | --- | --- |
|  | **B.** | quotient |

|  |  |  |
| --- | --- | --- |
|  | **C.** | sum |

|  |  |  |
| --- | --- | --- |
|  | **D.** | product |

**61.** Which number below best represents a debt of $7,585?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 7,585 |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 75,850 |

|  |  |  |
| --- | --- | --- |
|  | **C.** | -7,585 |

|  |  |  |
| --- | --- | --- |
|  | **D.** | -75,850 |

**62.**

|  |  |
| --- | --- |
|  | 2 units |
| 11 units |  |

What is the area of the rectangle above?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 13 square units |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 22 square units |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 26 square units |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 33 square units |

**63.**

Note: Figure is not drawn to scale.

If *x* = 8 units, *y* = 14 units, and *h* = 9 units, then what is the area of the trapezoid shown above?

|  |  |  |
| --- | --- | --- |
|  | **A.** | 72 square units |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 99 square units |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 85.5 square units |

|  |  |  |
| --- | --- | --- |
|  | **D.** | 126 square units |

**64.** Evaluate the expression below at *x* = 5.

|  |  |  |
| --- | --- | --- |
|  | **A.** |  |

|  |  |  |
| --- | --- | --- |
|  | **B.** |  |

|  |  |  |
| --- | --- | --- |
|  | **C.** |  |

|  |  |  |
| --- | --- | --- |
|  | **D.** |  |

**65.** Which of the following is equal to the expression listed below?

30 + 12

|  |  |  |
| --- | --- | --- |
|  | **A.** | (6 + 5)(6 + 2) |

|  |  |  |
| --- | --- | --- |
|  | **B.** | 6(5 + 2) |

|  |  |  |
| --- | --- | --- |
|  | **C.** | 6 + (5 × 2) |

|  |  |  |
| --- | --- | --- |
|  | **D.** | (6 × 5)(6 × 2) |