Name _____ Date _____ Class_____

Placement Test

1. To which set or sets below does the number $-\dfrac{7}{8}$ belong?

  A whole numbers only

  B rational numbers only

  C integers and rational numbers only

  D whole numbers, integers, and rational numbers

2. Which of the following points is graphed at the opposite of −4 on the number line below?

  A *A*   C *C*

  B *B*   D *D*

3. Jamal plotted points on a number line at the four values below.

$$0.27,\ -\dfrac{1}{4},\ 1.1,\ \dfrac{5}{3}$$

Which of these values is farthest from zero?

  A 0.27   C 1.1

  B $-\dfrac{1}{4}$ D $\dfrac{5}{3}$

4. Harriet recorded outdoor temperatures as −7°C, −2°C, and 1°C. Which of the following correctly compares the three temperatures?

  A $-7 < 1 < -2$ C $-2 < 1 < -7$

  B $1 < -2 < -7$ D $-7 < -2 < 1$

5. Which of the following is equivalent to the expression below?

$$\dfrac{2}{9} \times \dfrac{3}{4}$$

  A $\dfrac{2}{9} \div \dfrac{3}{4}$ C $\dfrac{2}{9} \div \dfrac{4}{3}$

  B $\dfrac{3}{4} \div \dfrac{2}{9}$ D $\dfrac{9}{2} \div \dfrac{4}{3}$

6. What is the greatest common factor of 12 and 48?

  A 12   C 36

  B 24   D 48

7. What is the least common multiple of 5 and 12?

  A 24   C 36

  B 30   D 60

8. Abby is making frozen popsicles using $5\dfrac{3}{4}$ cups of fruit juice and $1\dfrac{3}{4}$ cups of water. Abby mixes the fruit juice and water together. She will then pour the mixture into popsicle molds. Each mold will hold $\dfrac{1}{2}$ cup. How many popsicles can Abby make?

  A 7   C 20

  B 15   D 24

9. Zoe is making a quilt using 15 red squares and 30 green squares. Which combination shows the same ratio of red squares to green squares?

  A 3 red squares to 6 green squares

  B 6 red squares to 3 green squares

  C 5 red squares to 12 green squares

  D 12 red squares to 5 green squares

Placement Test

10. Last year, a local amusement park received 286,758 visitors. It was open every day of the year except 7 holidays. What was the average number of visitors to the park per day?

    A 786 visitors   C 957 visitors

    B 801 visitors   D 1,204 visitors

11. Dennis ran a mile in 593.7 seconds. Martina ran a mile in 573.36 seconds. What was the difference in their running times?
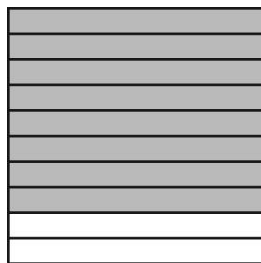
    A 5.14 s   C 20.34 s

    B 6.01 s   D 26.01 s

12. In Ellen's math class, there are 2 boys for every 3 girls. Which of the following could be the ratio of boys to girls in the class?

    A $\dfrac{17}{21}$ C $\dfrac{7}{14}$

    B $\dfrac{14}{21}$ D $\dfrac{11}{17}$

13. Seth bought a 12-ounce jar of peanut butter for $3.60. What is the unit price?

    A $0.03/oz   C $3.00/oz

    B $0.30/oz   D $3.03/oz

14. What percent of the rectangle below is shaded?

    A 20%   C 40%

    B 30%   D 80%

15. Yvette measured the length of her driveway to be 5 meters long. Which of these is an equivalent measurement?

    A 0.07 mi   C 16.4 ft

    B 15.5 yd   D 585 in.

16. Jason's budget is shown in the circle graph below. His total monthly budget is $3,000. How much does Jason spend on groceries?

    Rent 30%
    Other 15%
    Savings 30%
    Groceries 25%
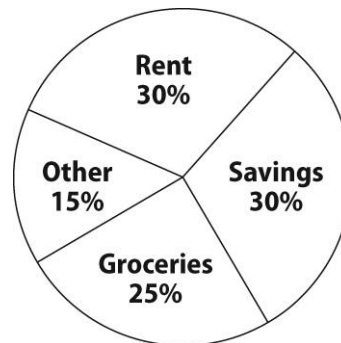
    A $25   C $450

    B $150   D $750

17. Mary bought 10 quarts of juice at the grocery. How many gallons of juice did she buy?

    A 1.4 gal   C 3.5 gal

    B 2.5 gal   D 4.5 gal

18. On a certain map, 3 inches represents 15 miles. Briarwood and Middletown are 5 inches apart on the map. What is the actual distance between Briarwood and Middletown?

    A 25 mi   C 50 mi

    B 30 mi   D 75 mi

Use the graph for 19–20.
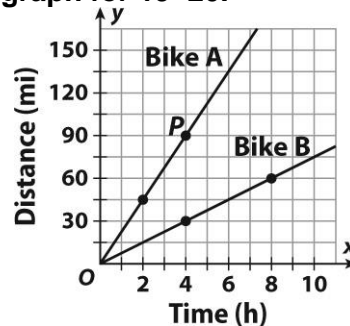
19. What are the coordinates of point P?

    A (4, 3)   C (4, 90)

    B (4, 30)   D (40, 90)

Placement Test

20. What is the independent variable?

    A Bike A   C time

    B Bike B   D distance

Use the table for 21–22.

Machine Rental Charges

| Hours, x	3	5	7
Charge, y ($)	51	85	119

21. Which equation expresses y in terms of x?

    A $y = 17x$ C $x = 51y$

    B $y = 25x$ D $x = 85y$

22. What is the charge for renting a machine for 3.5 hours?

    A $51.50   C $65.50

    B $59.50   D $86.50

23. What are all the factors of 15?

    A 1, 3, 5

    B 1, 3, 5, 10

    C 1, 2, 3, 5, 10

    D 1, 3, 5, 15

24. What is the value of the expression below?

    $$675 - (15 - 12)^3 \div 3$$

    A 216   C 666

    B 224   D 678

25. On a farm, there are c cows and 15 sheep. There are 4 more sheep than cows. Which equation represents the situation?

    A $c = 15 + 4$

    B $c = 15 - 4$

    C $c = 4 - 15$

    D $c = 4 \times 15$

26. Write an algebraic expression for the phrase below.

    8 more than three times a number n

    A $3 + 8n$ C $3n - 8$

    B $8n - 3$ D $3n + 8$

27. Which of the following expressions is equivalent to the expression below?

    $$4(2x + 11 - x)$$

    A $8x + 11$ C $2x - 11$

    B $x + 22$ D $4x + 44$

28. A triangle has an area of 369.25 square inches. The height of the triangle is 42.2 inches. What is the length of the base of the triangle?

    A 17.5 in.   C 42.7 in.

    B 35 in.   D 56 in.

29. A parallelogram has a base of 9 centimeters and a height of 21 centimeters. What is the area of the parallelogram?

    A 30 cm²   C 189 cm²

    B 94.5 cm²   D 567 cm²

30. A rectangular prism has a volume of 285.6 cubic feet. The prism is 12 feet long and 3.4 feet wide. What is the height of the prism?

    A 7 ft   C 19 ft

    B 15 ft   D 22 ft

31. Which inequality is shown on the number line below?

    A $p < -3$ C $p > -3$

    B $p \le -3$ D $p \ge -3$

32. Mariah bought a shirt for $28.50 and a belt. The total cost was $45.50. Which of the following equations can be used to find the cost of the belt?

    A $28.5 + b = 45.50$

    B $45.50 + b = 28.5$

    C $b = 28.5 - 45.50$

    D $b = 28.5 \times 45.50$

Name _____ Date _____ Class_____

Placement Test

33. What is the distance between points A and B on the grid?
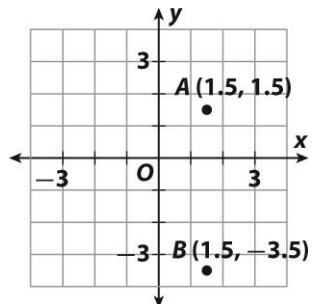
A 3 units   C 5 units

B 4.5 units   D 5.5 units

34. Charlene is wrapping the box below. How much wrapping paper will she need?
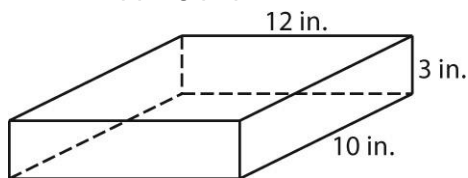
A 186 in²   C 480 in²

B 372 in²   D 558 in²

35. A shipping container in the shape of a rectangular prism is 60 feet long, $45\frac{1}{2}$ feet wide, and 14 feet tall. What is the volume of the shipping container?

A 2,400 ft³   C 38,220 ft³

B 2,730 ft³   D 76,440 ft³

36. What is the area of the polygon shown below?
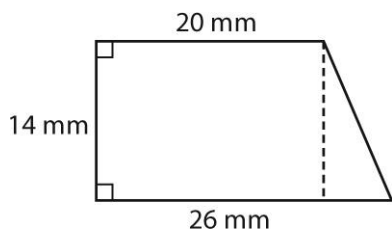
A 322 mm²   C 520 mm²

B 364 mm²   D 584 mm²

37. What is the median of the data represented in the box plot below?
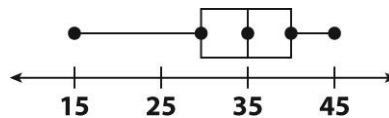
A 15   C 35

B 25   D 45

38. What is the mode of the data represented in the dot plot below?
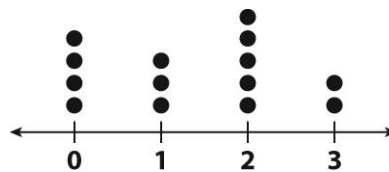
A 0   C 2

B 1   D 3

39. Lisa read 46 pages on Sunday, 15 pages on Monday, and 19 pages on Tuesday. Which of the following is closest to the mean number of pages she read over the three-day period?

A 19 pages   C 27 pages

B 21 pages   D 35 pages

40. The histogram below shows the number of hours per year students in Mr. Hopper's class do volunteer work. How many students do volunteer work between 21 and 30 hours per year?
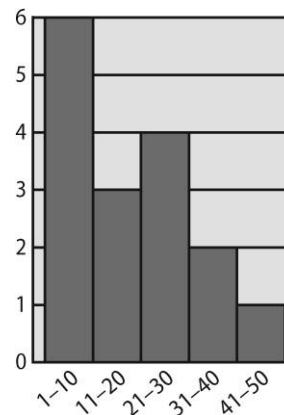
A 2 students   C 4 students

B 3 students   D 6 students