**Course 1 Benchmark Test – End of Year**

 **1.** Which rule best describes the relationship shown in the function table below?

|  |  |
| --- | --- |
| **Input** | **Output** |
| 1 | 3 |
| 2 | 6 |
| 3 | 9 |
| 4 | 12 |
| **5** | 15 |

 **A.** subtract 2

 **B.** add 2

 **C.** divide by 3

 **D.** multiply by 3

 **2.** Marcus needs to earn a grade *higher than* 88 on his final quiz in order to have an A average. Which inequality best represents this situation?

 **F.** *g* ≥ 88

 **G.** *g* > 88

 **H.** *g* < 88

 **I.** *g* ≤ 88

 **3. SHORT ANSWER** Define a variable and write an expression to represent the following phrase.

 *a number increased by 5*

 **4.** What is the least common multiple of 8 and 14?

 **A.** 56

 **B.** 28

 **C.** 4

 **D.** 2

 **5.** What is the volume of the rectangular prism shown below?



 **F.** 20 $cm^{3}$

 **G.** 75 $cm^{3}$

 **H.** 180 $cm^{3}$

 **I.** 222 $cm^{3}$

 **6.** The list below shows the number of books read by students in Abram**’**s class over the summer. What is the mode of the data?

 3, 6, 12, 4, 3, 5, 4, 8, 4, 10, 4, 8, 7, 5, 7

 **A.** 4 books

 **B.** 5 books

 **C.** 7 books

 **D.** 9 books

**Course 1 Benchmark Test – End of Year** *(continued)*

 **7.** Which type of data display would be best for showing how data change over time?

 **F.** box plot

 **G.** histogram

 **H.** line graph

 **I.** line plot

 **8.** There are 65 people watching a movie at a theater. If 40% of the customers purchased refreshments for the movie, how many customers purchased refreshments?

 **A.** 26 customers

 **B.** 34 customers

 **C.** 39 customers

 **D.** 163 customers

 **9.** Adeline is wrapping a gift for her mother in a box with the dimensions shown.



 What is the minimum amount of wrapping paper Adeline will need to completely cover the gift box?

 **F.** 188 square inches

 **G.** 376 square inches

 **H.** 424 square inches

 **I.** 488 square inches

 **10.** The ratio table shows the number of miles Karen can drive for 1, 2, 3, and 4 gallons of gasoline. Based on the table, how far would she be able to drive on 8 gallons of gasoline?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Gallons** | 1 | 2 | 3 | 4 |
| **Distance (mi)** | 30 | 60 | 90 | 120 |

 **A.** 30 mi

 **B.** 150 mi

 **C.** 210 mi

 **D.** 240 mi

 **11. SHORT ANSWER** Emily made 14 out of 19 shots during basketball practice. About what percent of her shots did she make? Explain your reasoning.

 **12.** A muffin recipe calls for a ratio of 5 cups of flour to 2 cups of sugar. For each cup of sugar that is used, how many cups of flour are needed?

 **F.** $\frac{5}{2}$ cups of flour

 **G.** $\frac{5}{7}$ cups of flour

 **H.** $\frac{2}{5}$ cup of flour

 **I.** $\frac{2}{7}$ cup of flour

**Course 1 Benchmark Test – End of Year** *(continued)*

 **13. SHORT ANSWER** The line graph shows the number of members during the first few months
of a photography club. Describe the data. Then predict the number of members for the sixth month.



 **14.** The table shows the number of points Anna scored this season. Find the mean number of points Anna scored.

|  |
| --- |
| **Points Scored** |
| 12 | 7 | 9 | 10 |
| 16 | 6 | 8 | 15 |
| 12 | 11 | 12 | 14 |

 **A.** 9 points

 **B.** 10 points

 **C.** 11 points

 **D.** 12 points

 **15.** Which of the following integers has the least absolute value?

 **F.** –3

 **G.** 4

 **H.** 8

 **I.** –12

 **16.** Albert purchased 2.4 pounds of mixed nuts for $4.79 per pound. How much did he spend in all,
to the nearest cent?

 **A.** $12.43

 **B.** $11.50

 **C.** $6.71

 **D.** $1.99

 **17.** Which of the following coordinate pairs corresponds to point *A*?



 **F.** (2, –3)

 **G.** (3, –2)

 **H.** (–2, 3)

 **I.** (–3, 2)

 **18.** Which of the following symbols, when placed in the blank, makes the number sentence true?

 $\frac{20}{75}$ \_\_\_\_\_0. $\overbar{26}$

 **A.** +

 **B.** =

 **C.** <

 **D.** >

**Course 1 Benchmark Test – End of Year** *(continued)*

 **19.** What is the volume of the triangular prism?



 **F.** 336 cubic meters

 **G.** 384 cubic meters

 **H.** 672 cubic meters

 **I.** 724 cubic meters

 **20.** The line plot shows the quiz scores of several students.



 What is the range of the quiz scores?

 **A.** 4 points

 **B.** 5 points

 **C.** 7 points

 **D.** 8 points

 **21.** Julio is evaluating the expression below.

 6 + 2(9 – 4) – 3 × 5

 Which operation should be performed first according to the order of operations?

 **F.** Add 6 and 2.

 **G.** Multiply 2 by 9.

 **H.** Subtract 4 from 9.

 **I.** Multiply 3 by 5.

 **22.** Which property is represented by the equation shown below?

 6 × 3 = 3 × 6

 **A.** Multiplicative Inverse Property

 **B.** Multiplicative Identity Property

 **C.** Associative Property of Multiplication

 **D.** Commutative Property of Multiplication

 **23.** The algebra mat below models the equation

 *x* – 2 = 4.



 What is the solution to the equation?

 **F.** 6

 **G.** 2

 **H.** –2

 **I.** –8

 **24. SHORT ANSWER** Graph the figure with the vertices *A*(2, –1), *B*(6, –1), and *C*(6, 4). Then classify the figure.



**Course 1 Benchmark Test – End of Year** *(continued)*

 **25.** Which number line shows the solution to the inequality *x* − 3 ≤ 1?

 **A.**





 **B.**



 **C.**



 **D.**

 **26.** The box plot shows the daily attendance at a fitness class.

 **Fitness Class Attendance**



 What is the median of the data?

 **F.** 55

 **G.** 40

 **H.** 35

 **I.** 20

 **27.** What value of *x* results in a true number sentence in the equation shown?

 2*x* = 16

 **A.** 32

 **B.** 14

 **C.** 8

 **D.** 4

**28.** Which of the following equations represents the function graphed on the coordinate plane?



 **F.** *y* = *x* + 5

 **G.** *y* = *x* + 1

 **H.** *y* = 11 + *x*

 **I.** *y* = 11 – *x*

 **29. SHORT ANSWER** The table below shows computer prices at an electronics store.

|  |
| --- |
| **Computer Prices ($)** |
| 950 | 620 | 545 | 810 |
| 775 | 1,120 | 905 | 775 |

 Find the mean absolute deviation to the nearest cent. Explain what this value represents.

**Course 1 Benchmark Test – End of Year** *(continued)*

 **30.** The table below shows the type and number of vehicles in a parking lot

.

|  |
| --- |
| **Types of Cars** |
| Minivans | 12 |
| Sedan | 28 |
| SUV |  9 |
| Trucks |  5 |

 What is the ratio of sedans to minivans in simplest form?

 **A.** 7 to 3

 **B.** 3 to 7

 **C.** 7 to 10

 **D.** 10 to 3

 **31.** The expression *rt* can be used to find the distance traveled by an object that has an average speed of *r* over time *t*. How many miles will a hot air balloon travel in 2.2 hours if it travels at an average speed of 12.5 miles per hour?

 **F.** 30.1 miles

 **G.** 27.5 miles

 **H.** 14.7 miles

 **I.** 5.7 miles

 **32.** What is the area of the triangle?



 **A.** 120 square units

 **B.** 75 square units

 **C.** 60 square units

 **D.** 40 square units

 **33. SHORT ANSWER** The table below shows the number of canoes rented from Outdoor Adventures over the past four weekends

.

|  |
| --- |
| **Canoe Rentals** |
| 21 | 32 | 17 | 24 |
| 15 | 30 | 28 | 26 |

 Find the range, median, first quartile, third quartile, and interquartile range of the data.

 **34.** A carpenter makes 4 table legs for each table that he builds. Which equation represents the relationship between the number of tables built *t* and the number of legs made *l*?

 **F.** *l* = 4*t*

 **G.** *t* = 4*l*

 **H.** *l* = *t* + 4

 **I.** *t* = *l* + 4

 **35.** Which of the following ratios is equivalent to $\frac{5}{8}$ ?

 **A.** 16 : 10

 **B.** 5 to 13

 **C.** $\frac{25}{44}$

 **D.** 15 out of 24

**Course 1 Benchmark Test – End of Year** *(continued)*

 **36.** Kylie surveyed several classmates about the number of states they have visited. The results are shown in the histogram.

 **How Many States Have You Visited?**



 How many of Kylie’s classmates have visited more than 15 states?

 **F.** 3 students

 **G.** 8 students

 **H.** 12 students

 **I.** 15 students

 **37.** What is the surface area of the triangular prism?



 **A.** 468 square centimeters

 **B.** 414 square centimeters

 **C.** 405 square centimeters

 **D.** 378 square centimeters

 **38.** Which of the following represents the decimal 0.32 written as a fraction in simplest form?

 **F.** $\frac{32}{100}$

 **G.** $\frac{16}{50}$

 **H.**$ \frac{17}{50}$

 **I.** $\frac{8}{25}$

 **39. SHORT ANSWER** Jeremy can purchase a
1.2-pound package of ground beef for $4.55
or a 1.6-pound package for $6.30. Which is
the better buy? Explain your reasoning.

 **40.** Pamela is the leading server on her volleyball team. On average, she serves an ace 44% of the time. If she attempts 25 serves in her next game, how many aces would you expect her to have?

 **A.** 57 aces

 **B.** 19 aces

 **C.** 11 aces

 **D.** 8 aces

**Course 1 Benchmark Test – End of Year** *(continued)*

 **41.** What percent is represented by the model?



 **F.** 175%

 **G.** 125%

 **H.** 75%

 **I.** 25%

 **42.** Which of the following best describes the center of a data set if there are outliers in the data but no big gaps in the middle of the data?

 **A.** mean

 **B.** median

 **C.** mode

 **D.** range

 **43. SHORT ANSWER** Complete the function table.

|  |  |
| --- | --- |
| **Input (*x*)** | **Output (3*x−* 1)** |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

 **44.** What is the surface area of a square pyramid with base side lengths of 10 inches and a slant height of 14 inches?



 **F.** 220 $ in^{2}$

 **G.** 280 $ in^{2}$

 **H.** 380 $ in^{2}$

 **I.** 660 $ in^{2}$

 **45.** Which of the following properties would you use to solve the equation?

 *r* + 4 = 11

 **A.** Addition Property of Equality

 **B.** Division Property of Equality

 **C.** Multiplication Property of Equality

 **D.** Subtraction Property of Equality

 **46.** Which of the following inequalities is graphed on the number line?



 **F.** *x* > 4

 **G.** *x* ≥ 4

 **H.** *x* ≤ 4

 **I.** *x* < 4

**Course 1 Benchmark Test – End of Year** *(continued)*

 **47. SHORT ANSWER** The box plot below shows the number of Calories in different lunches at a restaurant. Describe the shape of the distribution using symmetry and outliers.

 **Number of Calories**



 **48.** What is the area of trapezoid *QRST*?



 **A.** 54 square units

 **B.** 68 square units

 **C.** 76 square units

 **D.** 108 square units

 **49.** Mr. Addison is building a sandbox shaped like a rectangular prism. The sandbox is 8 feet long, 6 feet wide, and 1.5 feet deep. How many cubic feet of sand will the sandbox hold?

 **F.** 15.5 cubic feet

 **G.** 72 cubic feet

 **H.** 105 cubic feet

 **I.** 138 cubic feet

 **50.** The Pirates football team has played 75% of its games so far this season. If the team has played 9 games, how many games are there in the season?

 **A.** 7 games

 **B.** 11 games

 **C.** 12 games

 **D.** 15 games

 **51.** Which of the following expressions is equivalent to 3(4*x* + 1)?

 **F.** 7*x* + 4

 **G.** *x* + 4

 **H.** 12*x* + 1

 **I.** 12*x* + 3

 **52.** What is the missing rule in the function table?

|  |  |
| --- | --- |
| ***x*** | **?** |
| 2 | 7 |
| 3 | 8 |
| 6 | 11 |
| 9 | 14 |
| 12 | 17 |

 **A.** $\frac{x}{-4}$

 **B.** *x* + 5

 **C.** –4*x*

 **D.** *x* – 3

**Course 1 Benchmark Test – End of Year** *(continued)*

 **53.** Which of the following expressions correctly uses exponents to show the prime factorization of 168?

 **F.** $2^{4}$ × 3 × 7

 **G.** $2^{3}$ × $3^{2}$ × 7

 **H.** $2^{4}$ × $3^{2}$ × 7

 **I.** $2^{3}$ × 3 × 7

 **54. SHORT ANSWER** Which measure of center would you use to describe the center of the data shown on the line plot? Explain your reasoning.

 **Number of Pets**



 **55.** A pancake recipe calls for $\frac{1}{3}$ cup of mix for 4 pancakes. If Beth needs to make 60 pancakes,
how many cups of pancake mix will she need?

 **A.** 5 cups

 **B.** $4\frac{2}{3}$ cups

 **C.** $3\frac{1}{3}$ cups

 **D.** $\frac{1}{5}$ cup