Name _____ December, 2019

6th Grade Math Semester Exam Study Guide

Part 1 – Unit 1 (Number System Fluency)

Standards: NS.2 & NS. 3 - Fluently compute (add, subtract, multiply, divide) with multi-digit decimals)

1. What is the sum of 1.623 and 1.514?

2. Solve: 8.24 – 3.152

3. Find the quotient: 62,448 ÷ 8

4. John has 645 trading cards. He would like to sort them into 15 different containers. How many trading cards would be in each container if he sorts all of his cards?

5. Find the quotient. $12\overline{)769.44}$

6. Find the quotient. $0.12\overline{)769.44}$

Standard: NS. 1- Division of Fractions

7. Find the quotient in its simplest form:

$$\frac{3}{6} \div \frac{7}{3}$$

8. What is $\frac{7}{9} \div \frac{5}{6}$?

9. Danny ran laps around the track. He ran a total of 2½ miles. Each lap is 1/8 mile. Write and solve an equation Danny can use to find out how many laps he ran.

Standards: NS. 4a & 4b - GCF and LCM

10. Ryan wants to use the distributive property to rewrite the addition problem shown so that the numbers left in the parentheses have no common factor except 1. Write an equivalent expression that has numbers in parentheses whose only common factor is 1.

    (54 + 72)

11. Which expression is equivalent to 40 + 6?

    a. 2(20 + 6) b. 2(40 + 3) c. 2(20) + 2(3)

12. Alice is making bouquets. She has 20 red flowers and 32 yellow flowers. How many bouquets can she make by using all the flowers and splitting them equally?

13. What is the greatest common factor of 75 and 90?

14. What is the least common multiple of 3 and 8?

15. The cafeteria serves mashed potatoes every 6 days and french fries every 9 days. In how many days will they serve both on the same day again?

Part 2 – Unit 2 (Proportional Reasoning)

Standard: RP. 1 - Ratios

1. Write a ratio which compares the numbers of Xs to the number of Os.
   X X O O O X O O O X

2. The ratio of students to teachers on a field trip is 50:5. Write a statement describing this ratio, in simplest form.

3. In the 2018, the Atlanta United soccer team played a total of 38 games. They won 21 games, lost 7 games, and tied 6 games. What is the ratio of games won to games lost for the season?

Standard: RP. 2 & RP.3b - Unit Rate

4. Shelton bought 5 erasers for $1.35. What is the cost of each eraser?

5. Max's family drove their SUV 420 miles on a vacation. They used 30 gallons of gasoline. What is the unit rate that describes the distance the family drove per gallon of gasoline used?

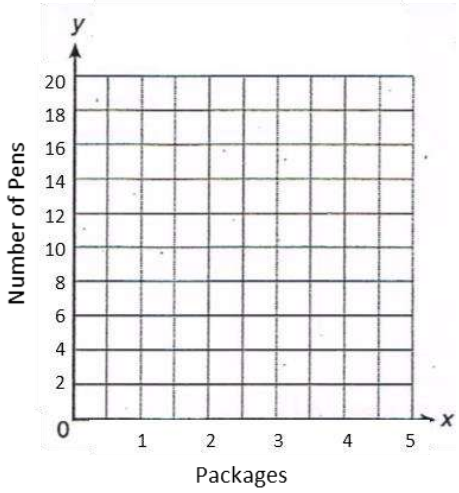
6. The grocery store sells 2 pounds of potatoes for $1.50. At this price, how much do 5 pounds of potatoes cost? _____ What is the unit rate? _____

Standard: RP. 3a - Tables of equivalent ratios

7. A package of pens contains 12 pens. Create a table that shows the ratios of different numbers of packages of pens to the number of total pens in each package.

Packages				
Pens				

8. Use the table you created in #8 above to graph that relationship.



9. The price for theater tickets is shown in the table below. What is the price for 12 tickets? _____

Tickets	Price
2	$16
3	$24
5	$40
7	$56
10	$80

10. Brandy runs on the track after school. She can run 3 miles in 27 minutes. At what rate does Brandy run each mile?

Standard: RP. 3c – Percent Proportions

11. Trevor is supposed to practice for the basketball team for 15 hours this week. So far, he has practiced for 40% of his hours. How many hours has Trevor practiced this week so far?

12. What percentage of 60 is 9?

13. What is 15% of 60?

14. What percent of 36 is 54?

Standard: RP. 3d – Conversions

15. How many pints are in 6 gallons?

16. A football team received a 5 yard penalty. How many feet must the ball and line of scrimmage be moved back?

17. How many centimeters are in 13 meters?

18. James has a recipe that requires $2\frac{1}{2}$ pints of lemon juice. If 1 pint = 2 cups, how many cups of lemon juice does James need?

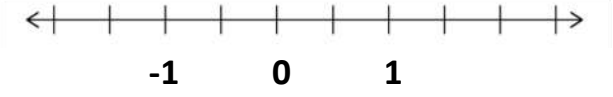
Part 3 – Unit 3 (Numbers & Their Opposites)

Standard: NS. 5 – Representing Integers

1. In Alaska one day, the low temperature was -18°F and the high was 42°F. What was the increase in temperature between the low and high temperatures?

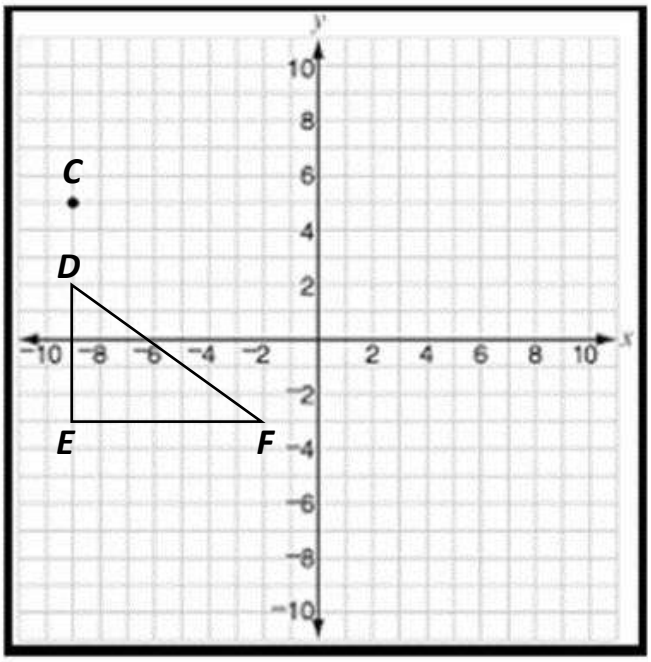
2. Write an integer to represent
   a. A 10-foot tree _____
   b. The roots of a tree are 5 feet below the ground _____
   c. The ground _____
   d. An account balance of $20 less than zero _____

3. Place point *A* at -2 and point *B* at $1\frac{1}{2}$ on the number line below.



Standard: NS. 6 - 8 & G.3 – Ordering, Opposites, Absolute Value, Reflections, Distance Between Points

Use the coordinate plane below for questions 4 – 9.



4. What is the ordered pair of point *C*?

   _____

5. What is the length of side *EF* of the triangle shown? _____

6. What is the length of side *DE* of the triangle shown? _____

7. Which point is 8 units from point *C*?

8. In which quadrant is point *D* located?

9. In which quadrant is point *F* located?

10. Absolute value represents the distance a number is from _____.

11. State how far each of the following is from 0.

    a. |-7| _____ b. |+5| _____

12. Use an inequality symbol to make a true statement.

    a. -12 ___ -3 b. -1 ___ -90

13. Give the ordered pair of point (-8, 14)

    a. reflected across the x-axis _____

    b. reflected across the y-axis _____

    c. reflected across both the x- and y-axes _____

14. What is the distance between the points *A*(-4, -10) and *B*(-4, -15)? ____

15. What is the distance between the points *C*(-4, 10) and *D*(-4, -15)? _____