Name _____ Date _____ Core _____ Math 7 Study Guide

Math 7: Study Guide PART 1

Section 1: Multiple Choice

1. A sprinter runs 200 meters in 24 seconds. What is the runner's average running rate in meters per second? Round to the nearest tenth.

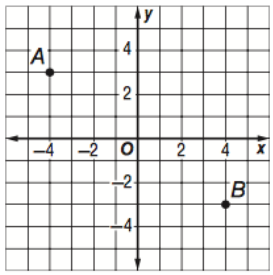
2. Simplify the complex fraction. $\dfrac{\frac{8}{11}}{4}$

3. Megan surveyed a random sample of 40 students at her school and found that 25 of them ride the bus to school each day. If there are 480 students at Megan's school, about how many of them ride the bus to school each day?

4. What is the constant rate of change of the ordered pairs?

x	y
2	3
4	9
6	15
8	21

5. Is the slope that passes through the Points A and B positive or negative? Find the slope.



6. Last summer there were 78 players at Coach Rodriguez's basketball camp. This year there are 145% of this number of players. How many players are there at camp this year? Round your answer to the nearest whole number.

7. 55 is 25% of what number?

8. Last year there were 33 students at a creative writing workshop. This year 38 students attended the workshop. To the nearest tenth, what is the percent of change in the number of students in attendance? Then determine if it is an increase or decrease.

9. Which of the following rational numbers is equivalent to a repeating decimal?
   a. $\frac{18}{25}$
   b. $\frac{40}{64}$
   c. $\frac{64}{88}$
   d. $\frac{35}{50}$

10. Nate has $7\frac{5}{6}$ yards of fabric. He uses $2\frac{2}{3}$ yards of fabric to make a pillow. How much fabric does he have left?

11. Find $\frac{7}{8}$ x $5\frac{2}{7}$. Write in simplest form.

12. Write an equivalent expression to the algebraic expression **8(-3x – 2)** ?

13. Write the following algebraic expression in simplest form. **-19g + 12 + 7g – 3** ?

14. Which of the following linear expressions ***cannot*** be factored?
   a. 18x + 24
   b. 16x – 9
   c. 10x – 4
   d. 9x + 27

15. Simplify the expression **(-11x + 8) – (3x – 3)** .

Section 2: Short Answer **SHOW ALL WORK FOR CREDIT**

16. For a graph to be proportional, it must…

17. A home improvement store normally sells 20-foot extension ladders for $275. This week the ladders are discounted by 30%. What is the sale price of the ladders?

18. What is the decimal equivalent of the fraction $\frac{28}{45}$? Write your answer in **bar notation**.

19. Evaluate the expression **-4g + gh** if g = -6 and h = 3.

20. Suppose the length of each side of a square is decreased by 6 feet. If the perimeter of the square is now 44 feet, what was the original length of each side?

Section 3: Open-Ended **SHOW ALL WORK FOR CREDIT**

21. Complete all parts.
    a. Write 78.5% as a decimal.

    b. Write $\frac{31}{40}$ as a decimal.

    c. Order the following rational numbers from least to greatest. Make sure to list numbers in the form they were given to you below.
    78.5%, $\frac{31}{40}$, 0.7 , 0.78

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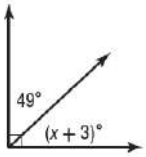
Math 7: Study Guide PART 2

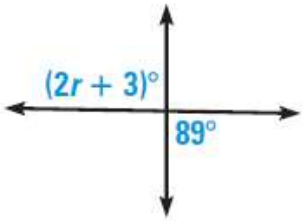
Section 1: Multiple Choice

1. What is the solution to the equation **$6(x + 2) = -24$** ?

2. What is the measure of *x* in the figure?



3. What is the value of *x* in the figure?



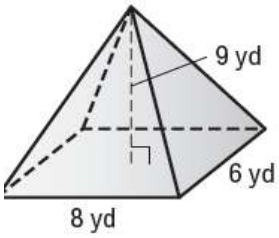
4. A triangle has angle measures of 90°, 45°, and 45°. The triangle has two congruent sides. Classify the triangle by its angles and sides.

5. What is the scale factor of a drawing if the scale is 1 inch = 5 feet?

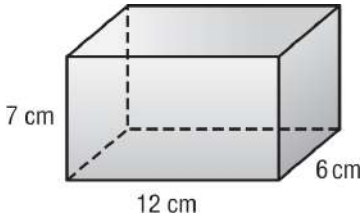
6. If Michelle rollerblades around a circular track with a radius of 60 meters, how far does she skate? Use 3.14 for pi. Round to the nearest tenth.

7. A large pizza at Angelo's Pizzeria has a diameter of 16 inches. What is the area of the pizza? Use 3.14 for pi. Round to the nearest tenth.

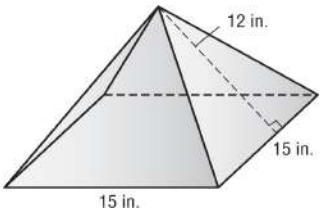
8. What is the volume of the pyramid shown?



9. What is the surface area of the rectangular prism shown?



10. The square pyramid has base side lengths of 15 centimeters and a slant height of 12 centimeters. What is the total surface area of the pyramid?



11. A jar contains 5 pennies, 8 nickels, 7 dimes, and 5 quarters. If a coin is selected at random, what is the probability of selecting a penny?

12. Find the number of possible outcomes of tossing a penny four times.

13. A computer store builds custom computers by allowing customers to choose 1 of 6 different CPUs, 1 of 7 hard drives, and 1 of 4 video cards. How many different computers are possible?

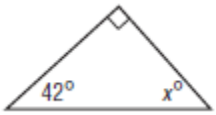
14. In an obstacle course race, how many ways can six finalists be ordered?

15. Which of the following represents two dependent events?
    a. Picking a marble from a bag, replacing it, and picking another marble
    b. rolling a number cube and flipping a coin
    c. picking a marble from a bag, not replacing it, and picking another marble
    d. flipping a coin twice

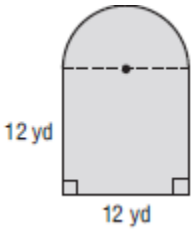
Section 2: Short Answer **SHOW ALL WORK FOR CREDIT**

16. What is the solution to the equation 6x + 22 = -2?

17. Write and solve an equation to find the missing measure.



18. Find the area of the figure. Use 3.14 for pi. Round to the nearest tenth.



19. Ronaldo rolled a number cube 50 times. During these trials he rolled the number 5 a total of 11 times. Based on these trials, what is the probability of rolling a 5? Does this represent a theoretical or experimental probability? Explain.

20. What is the probability of tossing a penny and landing on tails four times in a row? Write your answer as a fraction, decimal, and percent.

Section 3: Open-Ended **SHOW ALL WORK FOR CREDIT**

21. Complete all parts.

a. What operation should be performed **first** to solve the inequality **-9x - 4 > -22** ?

b. Solve the inequality.

c. Graph the solution to the inequality.