

Name \_\_\_\_\_ Date \_\_\_\_\_

Chapter 7 Review and Study Guide: Algebraic Reasoning

Objective: Use numbers and operation symbols to write verbal phrases as numerical expressions

For questions 1-2, translate each phrase into an algebraic expression.

- 1.) three less than a number \_\_\_\_\_ 2.) the product of a number and 8 \_\_\_\_\_

Objective: Use the order of operations to evaluate expressions

For questions 3-4, use the order of operations to evaluate each expression.

- 3.)  $7 \times 8 + (24 \div 4) =$  \_\_\_\_\_ 4.)  $7 + (8 \times 9 + 7 + 70 \div 10) =$  \_\_\_\_\_

Objective: Generate numerical patterns and identify pattern relationships

- 5.) Draw figure 4. Then, complete the table at the right.



Figure 1



Figure 2



Figure 3

Figure 4

Figure	Toothpicks
1	
2	
3	
4	

- 6.) Karley added 14 bottle caps to her collection. She now has 54 bottle caps. Write and solve an equation to find the number of bottle caps she originally had.

- 7.) Travis and his three friends go to the baseball game. Each person buys a ticket for \$8, a snack for \$4, and a drink for \$2. Which numerical expression represents the total cost of the trip to the baseball game for Travis and his friends?

- A  $4 + (\$8 \times \$4 \times \$2)$                       B  $4 \times (\$8 + \$4 + \$2)$   
 C  $(4 \times \$8) + (\$4 \times \$2)$                       D  $(4 \times \$8 + \$4) + (4 \times \$4 + \$2)$

Objective: Generate a rule from an input/output table

For questions 8-9, determine the rule used to generate each output number.

8.)

In	Out
42	6
56	8
63	9
70	10
49	7

Rule = \_\_\_\_\_

9.)

In	Out
2	18
8	72
3	27
6	54
5	45

Rule = \_\_\_\_\_

Objective: Identify and extend patterns and sequences

For questions 10-11, write the next three terms in each sequence.

10.) 7.3, 9.4, 11.5, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

11.) 0.03, 0.3, 3, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

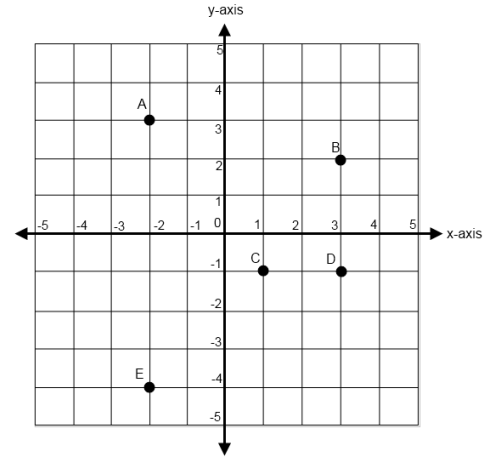
Objective: Identify and graph points on a coordinate plane

Use the coordinate grid to the right to answer questions 12-14.

12.) Name the coordinates for point D. \_\_\_\_\_

13.) Name the coordinates for point A. \_\_\_\_\_

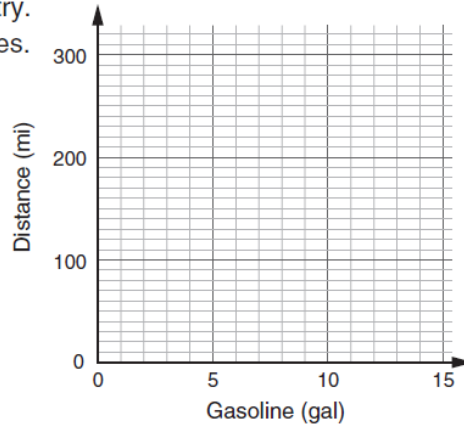
14.) What point is two units west and four units south of the origin? \_\_\_\_\_



Objective: Use a rule, table, or graph to solve problems

15.) Chantel is planning a trip to drive across country. Her car uses 1 gallon of gasoline every 24 miles.  
Rule: distance = 24 \* number of gallons

Gasoline (gal) (g)	Distance (mi) (24 * g)
1	
4	
	168
13	



16.) Plot a point to show the distance the car would travel on 6 gallons of gasoline. How many miles would it go? \_\_\_\_\_

Objectives: Evaluate whether an equation or inequality is true or false

For questions 17-18, determine whether each equation or inequality is true or false for n = 8

17.)  $n + 3.4 = 11.4$  true false

18.)  $n - 3 > 5$  true false

Objective: Evaluate variable expressions

For questions 19-20, Use the order of operations to evaluate each expression for n = 4.

19.)  $2n + 1 =$  \_\_\_\_\_

20.)  $n \div 3 =$  \_\_\_\_\_