Algebra 2 - Unit 1 Part 1 Test Name\_\_\_\_\_\_\_\_\_\_\_\_\_­­\_\_\_\_\_ Period\_\_\_\_Date\_\_\_\_\_\_\_

**Write the letter that best answers the question or completes the statement.**

\_\_\_\_\_1. Which of the following sets of numbers does not contain 3.75.

a. real b. rational c. irrational d. all of these.

\_\_\_\_\_2. What is the value of ?

a. 45 b. 19,683 c. 643,729 d. 4,782,969

\_\_\_\_\_3. What is the value of ?

a. 243 b. 3 c. 9 d. 140

\_\_\_\_\_4. What is the slope-intercept form of a linear equation?

a. x = my + b b. y = mx – b c. y + mx = b d. y = mx + b

\_\_\_\_\_5. Which property of addition is illustrated by the statement (10 + a) + c = 10 + (a + c)

a. Associative property b. Commutative Property

c. Identity Property d. Inverse Property

\_\_\_\_\_6. Which property of multiplication is illustrated by the statement

a. Associative property b. Commutative Property

c. Identity Property d. Inverse Property

7. Evaluate the expression.  7.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. Simplify the expression  8.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. Simplify the expression:  9.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. Calculate the slope of the given ordered pairs: 10.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

( 3, - 2 ) ( 4, 5 )

11. Use the slope-intercept form of a line to create an equation from the given information:

m = -3, b = 7

11.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. Write the equation of the graph in slope-intercept form:

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12. Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13. Create a linear equation given the following information: m = ; point on the line: ( 6, 4 )

13.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14. Mac bikes at a non-constant rate of speed from home through town. He then begins his training ride at a constant speed of 25 miles per hour. After 3 hours of biking at a constant speed, his odometer shows he traveled 83 miles since he left home.

1. Write a linear equation in slope-intercept form for the distance, *d*, in miles that Mac has traveled in terms of the time, *t*, in hours since he began his training ride.
2. When Mac began his training ride, how far from home was he?

15. Create an equation that is parallel to the given line and goes through the given point:

y = 4x + 2 ( 5, - 3 )

15.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16. Create an equation that is perpendicular to the given line and goes through the given point:

y = 4x + 2 ( 8, - 3 )

16.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Solve the following equations and inequalities**.

17.  17.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18.  18.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19.  19.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20.  20.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

21. Graph **x < - 2** on a number line. 21.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

22. Solve the following literal equation: 22.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

A = , solve for 

**Solve and graph the following compound inequality and absolute value equations.**

23.  or  23. Solution:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Graph:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24.  24. Solution:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Graph:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

25. Describe in your own words the meaning of absolute value.

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**BONUS (CHOOSE 2)**:

1. Fund-Raising: A charity is planning to raffle off a new car donated by a local car dealer. The charity wants to raise at least $70,000. It expects to sell at least 1250 tickets and to spend $5,000 promoting the raffle. Write and solve an inequality to find the possible ticket prices, *p*.
2. Name three properties of addition and multiplication. Then give an example of both addition and multiplication for each property.
3. Describe a linear representation.
4. Prove that any number to the zero power is one.