Coordinate Algebra 2nd 9 Weeks Benchmark Review

1. Evaluate $g(x) = \frac{1}{4}x - 9$ when $x = 16$.

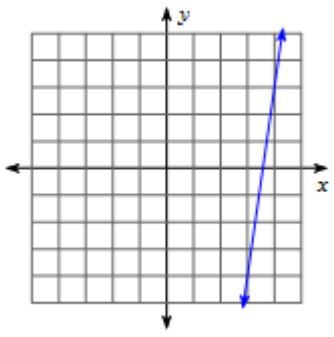
2. Draw a graph that does NOT represent a function.

3. Write an expression that represents each of the following situations.

A) Rebecca lost 7 out of her x teeth under the table.
B) Miranda had $25 and spent x dollars on a pair of pajamas.
C) Sam is 4 years older than his sister Laney who is x years old.
D) Dominic drove the x mile course 75 times.

4. Your friend told you to drink at least 48 ounces of water each day. One of your favorite cups contains 16 ounces of water, while your mama's favorite cup holds 24 ounces. Write a system of inequalities to represent how many cups of water you should drink from your cup and your mama's favorite cup in order to reach your minimum recommended amount of 48 ounces.

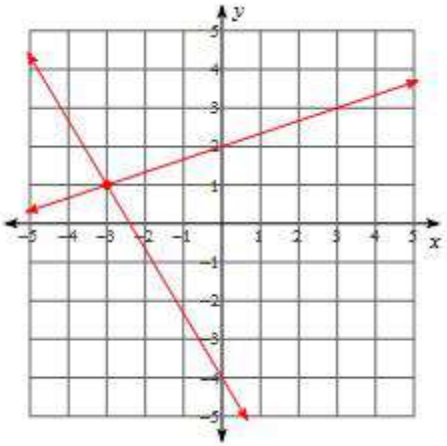
5. What is the slope of the line graphed below?



6. Which point lies on the graph of the system?

$$-2x - 3y = 12$$
$$4x + 12y = -24$$

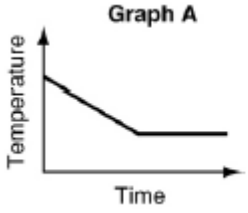
7. Write the system of equations for the graph.

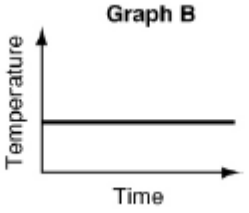


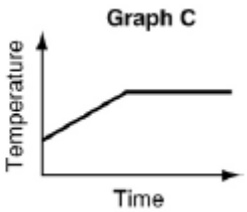
8. You have no more than $150 to spend. You want a pair of jeans that costs $49.79 including tax, and you want to buy a pair of shoes, which will have 4% sales tax. Write the inequality that represents the amount of money you have to spend.

9. The temperature of the water in a glass rose steadily for several hours until it reached room temperature, then remained constant.

Choose the graph that represents the above situation.





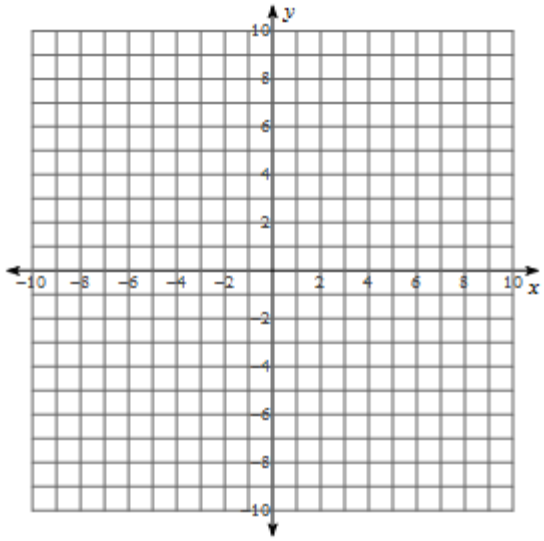


10. What is the solution to the inequality $25x - 9 \geq 20x + 16$?

11. Graph the solution to the following system of linear inequalities.

10) $y \geq \frac{15}{7}x - 8$

$y < \frac{3}{7}x + 4$



12. If 8x + 10y = -20 and -10x – 2y = 4, then x + y = ? ?

13. Nancy and her sister are saving to buy matching bikes. Nancy has $75 and plans to save $10 per week. Her sister has $95 and plans to save $7 per week. In how many weeks will Nancy have more money saved than her sister?

14. Solve by elimination.

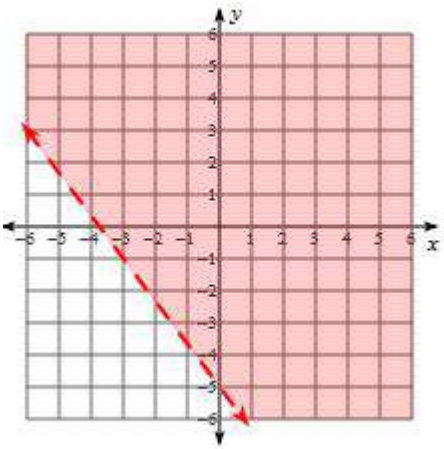
$$5x + 5y = -5$$
$$-6x - y = 16$$

15. Wilbur and Elisa each improved their yards by planting rose bushes and shrubs. They bought their supplies from the same store. Wilbur spent $68 on 1 rose bush and 7 shrubs. Elisa spent $161 on 7 rose bushes and 14 shrubs. What is the cost of one rose bush and the cost of one shrub?

16. What is the solution of $2x - 12y = -14$
$-4x - 3y = 28$

17. Lisa's school is selling tickets to the annual dance competition. On the first day of ticket sales the school sold 1 adult ticket and 10 student tickets for a total of $134. The school took in $89 on the second day by selling 6 adult tickets and 5 student tickets. What is the price each of one adult ticket and one student ticket?

18. Write the inequality represented by the graph below?



19. What are the next three terms in the arithmetic sequence: 12, 15, 18, 21, … ?

20. Find the 43rd term of the arithmetic sequence: 11, 7, 3, -1, –5, …

21. Deann started keeping a running log. The first night she ran, she ran 6 miles. Every day she runs 3 more miles. If this pattern continues, how many miles will she have run by day 73?

22. Which relation is NOT a function?

A) (1, 4), (6, 2), (7, 6) B) (4, 0), (4, -1), (4, 9)

C) (0, 0), (1, 1), (3, 3) D) (2, 2), (6, 8), (9, 4)