

Name _____

Algebra 2

Summer Homework 2018-19

Complete each problem. Label answers when appropriate. Show your work.

1. A restaurant charges \$9.95 for a large pizza with two toppings, and \$1.25 for each additional topping.
 - a. Write an equation for the total cost C of a pizza with t number of toppings. 1a. _____
 - b. Find the cost of a pizza with 3 toppings. 1b. _____
 - c. Find the cost of a pizza with 5 toppings. 1c. _____

2. Solve: $7x - 8(x + 3) = 1$ 2. _____

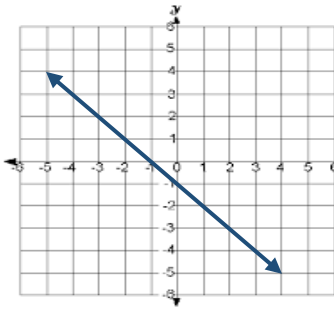
3. Solve: $-15x = 4(x - 3) - 7$ 3. _____

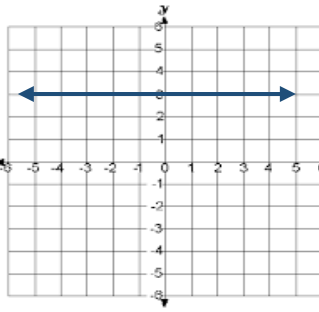
4. Solve: $-x + \frac{3}{4} = -\frac{2}{3}x - \frac{5}{4}$ 4. _____

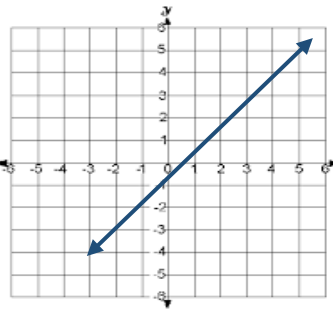
5. Solve for b : $2b - 1 = 6a - (b + 5)$ 5. _____

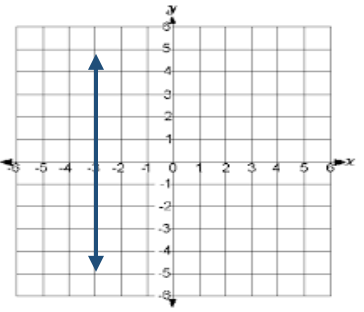
6. Jason started with d dollars in his piggy bank. One week later, Jason had doubled the amount in his piggy bank. Another week later, Jason was able to add \$35 to his piggy bank. At this point, the piggy bank had \$130 in it. What is d ? 6. _____

7. Name the type of slope drawn in each graph below.









8. Determine the slope of the line passing through the points $(-3, 3)$, $(1, 1)$. 8. _____

9. Write the following equation in slope-intercept form.

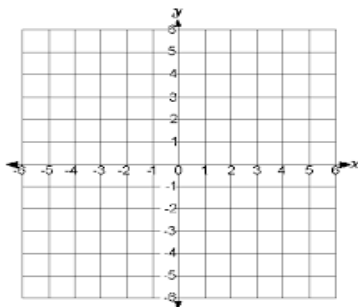
$$3x + 2y = 6$$

9. _____

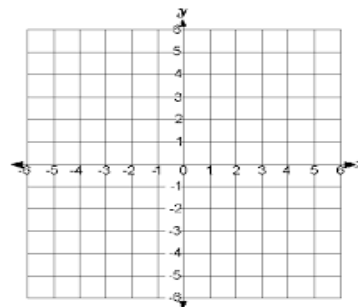
a. State the slope. 9a. _____

b. State the y-intercept. 9b. _____

10. Graph the line: $y = -\frac{2}{3}x + 4$



11. Graph the line: $-6x + 3y = -18$



12. Determine whether the following lines are parallel, perpendicular or neither.

Explain your answer.

12. _____

$$2x + 3y = 6$$

$$3x + 2y = 4$$

13. What are the 2 pieces of information that you need to have in order to write the equation of a line?

13. _____

14. Write the equation of the line in slope-intercept form when

$$m = -\frac{2}{5} \text{ with a point } (0, 6).$$

14. _____

15. Write the equation of the line that passes through $(-8, -2)$ and has a slope of $m = 3$.

15. _____

16. Write an equation in slope-intercept form of the line that passes through the points $(1, 3)$ and $(4, 6)$

16. _____

17. Given: $y = \frac{1}{3}x + 4$, a. write a line that is parallel to the given line _____

b. write a line that is perpendicular to the given line _____

18. Simplify: $5x(2x^2 - 3x + 1)$ 18. _____

19. Simplify: $(x + 1)(2x - 3)$ 19. _____

20. Simplify: $(x - 3)^2$ 20. _____

21. Factor with GCF: $12x^3 + 4x$ 21. _____

22. Factor difference of squares: $x^2 - 16$ 22. _____

23. Factor by grouping: $x^3 - 3x^2 + 7x - 21$ 23. _____

24. Factor the trinomial: $x^2 - 8x - 20$ 24. _____

25. Factor the trinomial: $2x^2 - 13x + 15$ 25. _____