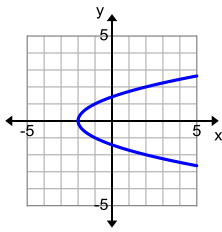


Name: _____ Period: _____

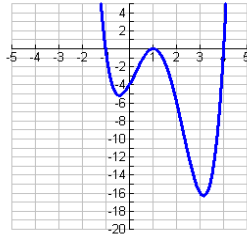
Score:
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Unit 3 Review

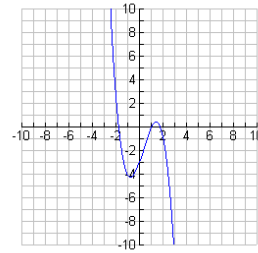
1. Is it a function? Why?



2. Is it a function? Why?



3. Is it a function? Why?

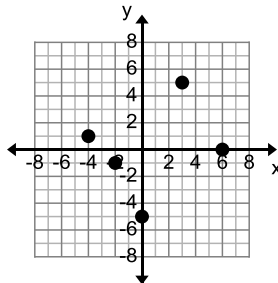


State the domain and range. Is it a function? Why?

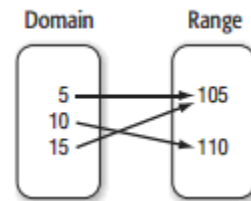
4.

$\{(6,1), (-3,8), (1,-3)\}$

5.



6.



7.

x	y
-3	0
-1	-1
0	0
2	-2
3	4

8.

x	y
-2	-1
-2	1
-1	0
1	0
2	1

9.

$\{(4,-2), (-6,1), (0,7), (4,3), (-5,0)\}$

Function Notation: SHOW WORK!

Find each value if

$f(x) = x^2 + 1$

$g(x) = 5x + 8$

$h(x) = -10 - 3x$

10. $f(4)$

11. $g(6)$

12. $h(-5)$

13. $h\left(\frac{1}{3}\right)$

14. $f\left(\frac{1}{4}\right)$

15. $g(-5)$

Find each value if $f(x) = 2x - 1$ and $g(x) = 2 - 7x$

16. $f(0)$

17. $f(12)$

18. $g(4)$

19. $f(-2)$

20. $g(-1)$

21. $f(-6)$

Find the rate of change or slope of the line.

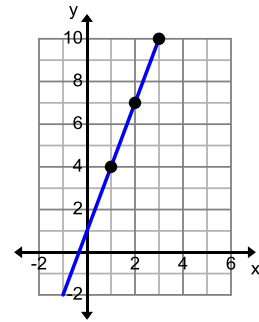
22.

x	y
2	6
5	10
8	14
11	18

23.

$$\{(2,6), (3,8), (4,10)\}$$

24.



25. From questions 22-24 which has the greatest slope? Why?

26. Jack is on a road trip with David. David has already driven 100 miles, and Jack will drive 65 miles per hour. Write an equation to calculate how many miles they have driven according to how long Jack has driven.

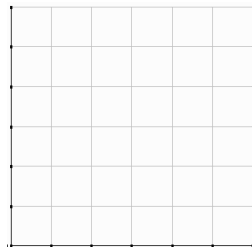
- What is the rate of change for the situation?
- What is the initial value for the situation?
- Write an equation to model the situation.

27. John started a new exercise plan and he decides to bike 4 miles each day.

a. Make a table and graph to find the number of total miles biked in 2, 3, 4, or 5 days.

b. Write an equation model the total number of miles biked (y) in any number of days (x).

x	y



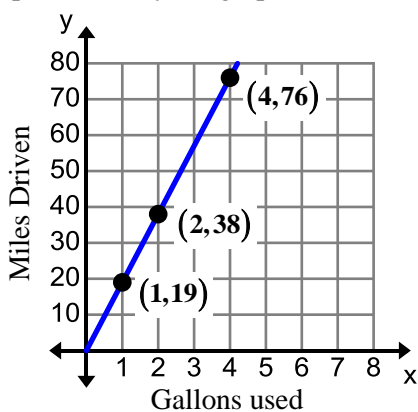
28. Carmen pays a swimming instructor for private lessons. The instructor charges an initial fee and a constant amount per hour. Carmen paid \$237 for six hours of instruction. Then for eight hours of instruction she paid \$311. Assume the relationship is linear.

a. Make a table of the situation.	b. Write an equation to model the situation.
c. Interpret the slope.	d. Interpret the y-intercept.

29. John buys a plant. After one month the plant is 5.5 inches tall. After 3 months the plant is 6.5 inches tall. Assume the relationship is linear.

a. Make a table of the situation.	b. Write an equation to model the situation.
c. Interpret the slope.	d. Interpret the y-intercept.

30. A Toyota Camry has a gas mileage of 24 miles per gallon. The gas mileage of a Toyota Tundra is represented by the graph below. Compare and interpret their gas mileage.



Toyota Tundra

- What is the gas mileage for the Toyota Camry?
- What is the gas mileage of the Toyota Tundra?
- Compare and interpret their gas mileage.

31. Mark is playing his dad in a game of basketball. His dad gives him some points to start the game. Mark's score is represented by the function $p = 2b + 3$, where p is the number of points scored and b is the number of baskets made. His dad's score is shown in the table below.

Mark's Dad

Baskets Made (b)	Points Scored (p)
1	2
2	4
3	6
4	8
5	10

- Compare the functions by comparing their y-intercepts and rates of change.
- How many points will Mark have if he makes 20 baskets?

Determine whether the graphs below are *linear* or *nonlinear*.

32.

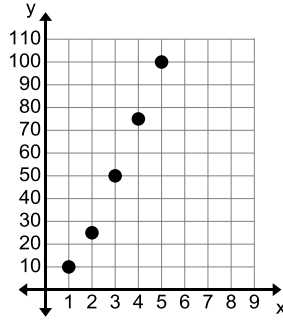
X	Y
1	28
2	24
3	20
4	16
5	12

33.

X	Y
1	1
4	5
7	10
10	16
13	23

Determine whether the graphs below are *linear* or *nonlinear*.

34.



35. $\{(0,0),(5,15),(10,30),(15,45),(20,60)\}$

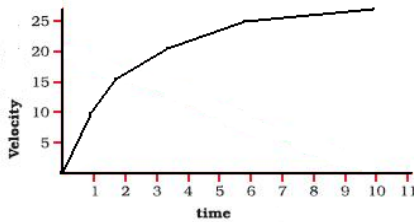
36. There are 1,440 minutes in a day. The total minutes is a function of the days. Does this situation represent a linear or nonlinear function? Explain?

37. Circle all of the equations that are linear.

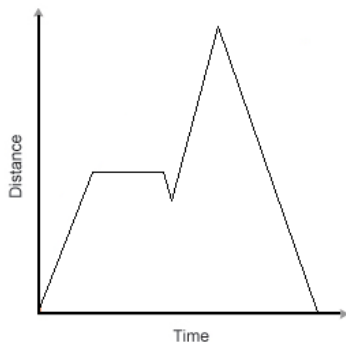
$y = 7 - 2x$	$y = x^2 + 7$	$y = \frac{x}{5} + 7$	$y = 7$	$5x + 7y = 10$	$y = x + 7$
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Qualitative graphs

38. The graph below displays Jacob's velocity during his morning run. Describe the change in the velocity as time went on.

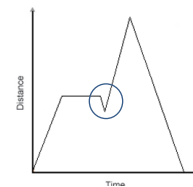


39. Use the graph below which displays the distance that Tanya hiked away from her campsite.



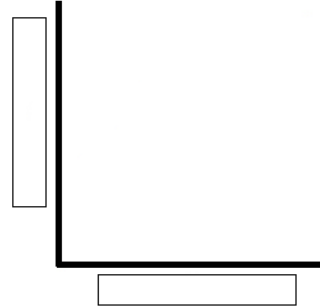
a. What situation could the horizontal line segment represent?

b. What does the small decrease after the horizontal line represent in this situation?



c. Did Tanya's distance increase or decrease during the first portion of her hike? Explain.

40. Randy rides his skateboard down a vertical ramp. He starts off with a lot of velocity but then levels out at a constant velocity when he hits the ground. Sketch a qualitative graph to represent this situation.



Translate each sentence into an equation. Then solve.

41) one-fourth of a number less sixty is 8.

42) Seven less than 4 times a number is 9.

43) The quotient of a number and 10, plus 14, is 6.

44) Jerome completes 8 extra credit problems on the first day and then 4 problems each day until the worksheet is complete. There are 28 problems on the worksheet. Write and solve an equation to find how many days it will take Jerome to complete the worksheet after the first day.

Equation(s):

Solution:

45) The Yeoman family spent a total of \$35.50 on lunch. They bought 5 drinks and 3 sandwiches. Each drink costs \$2.50 less than a sandwich. Write an equation that could be used to find the cost of each sandwich.

Equation(s):

Solution: