

FUNCTION

7.2 Intro to Functions

Guided Notes

Name: _____

Define the following Vocabulary

Function:

Set:

Domain:

Range:

Rule	
Polygon Names	Input Output
Triangle	
Square	
Pentagon	
Hexagon	
Octagon	

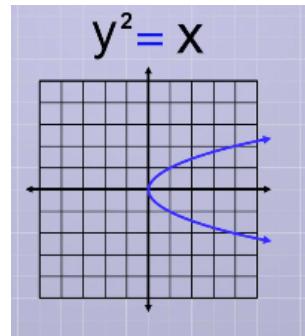
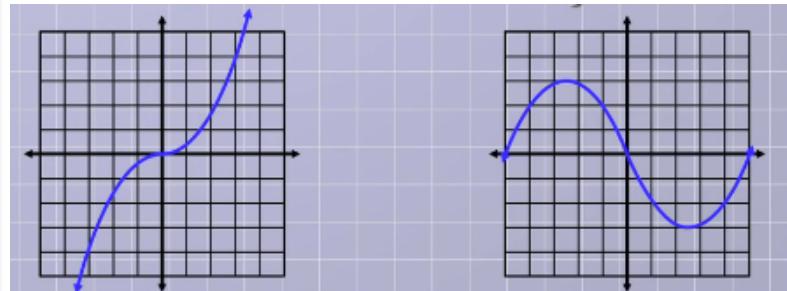
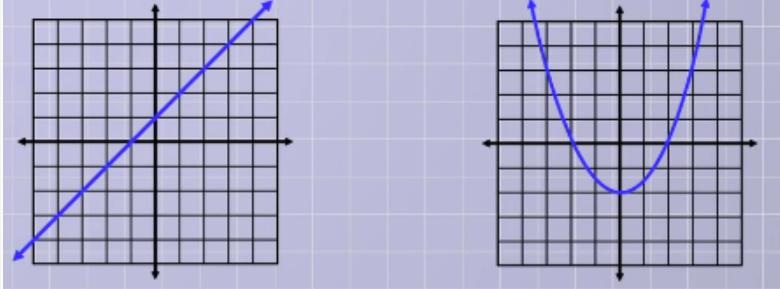
Fill out the function table below to decide if the equation is a function or not.

$y = 2x$	
Input	Output
x	y

$y^2 = x$	
Input	Output
x	y

$y = x + 1$	
Input	Output

Vertical Line Test



Function Output
 $f(x) = y$
 Input

Let $f(x) = 3x + 2$
 What is $f(4) =$
 $f(5) =$
 $f(6) =$

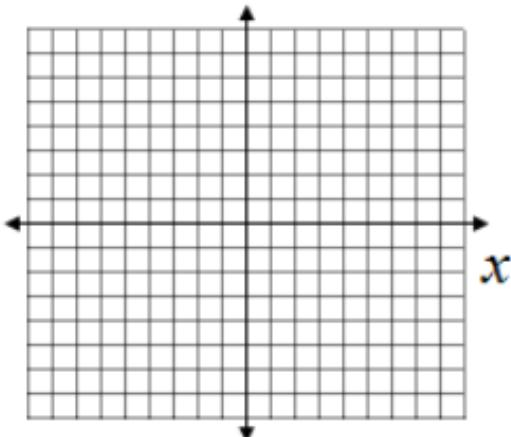
Old Way

$$y = 2x + 1$$

New Way

$$= 2x + 1$$

x	y
0	
1	
2	
	11



x	
0	
1	
2	
	11

$f(x)$ reads f of x :

FUNCTION NOTATION!

$$f(x) =$$

$$f(3) =$$

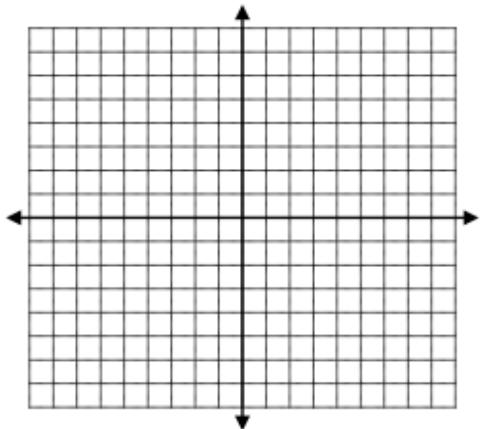
$$f(-2) =$$

$$f(m) =$$

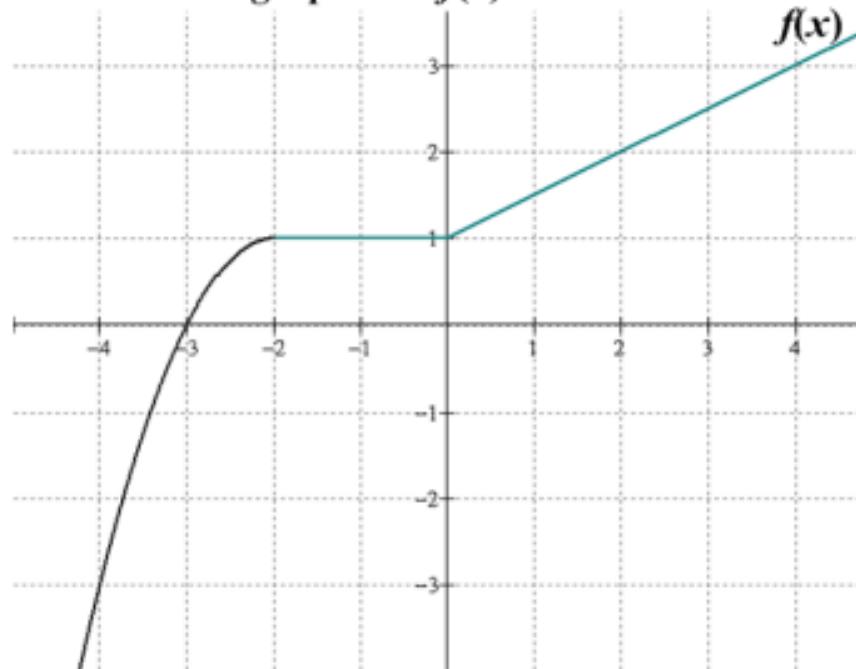
$$f(x) = 20$$

$$f(x) =$$

x	$f(x)$
5	
8	
-2	
	15



Given the graph is of $f(x)$



$$f(4) =$$

$$f(0) =$$

$$f(-1) =$$

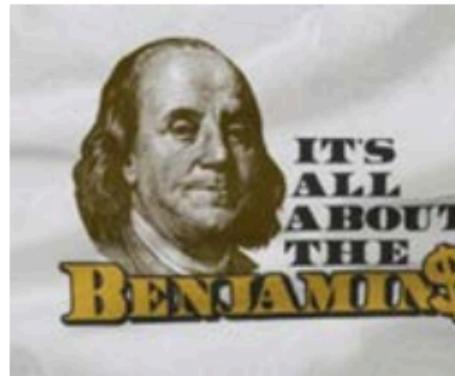
$$f(2) =$$

$$f(-3) =$$

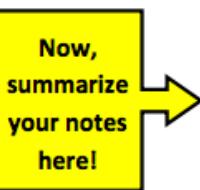
$$f(x) = -3$$

A certain company makes money determined by the function $P(u) = \frac{1}{4}u^2 - 2u$,
where u = units of incense sold and P = profit

- Read the notation.
- Find $P(8)$.
- What does $P(8)$ mean?
- What does $P(u) = 86,000$ mean?



SUMMARY:



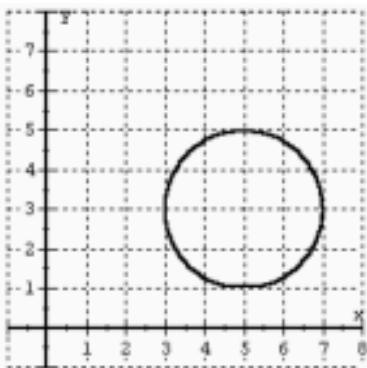
7.2 Intro to Functions

PRACTICE

Part 1: Function or Not a Function?

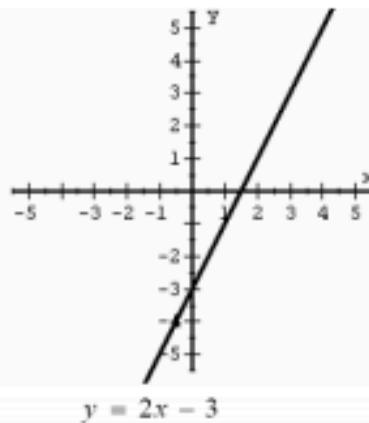
State whether each graph represents a function or not.

1.



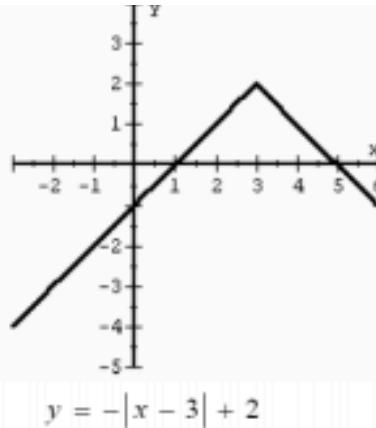
Function?

2.



Function?

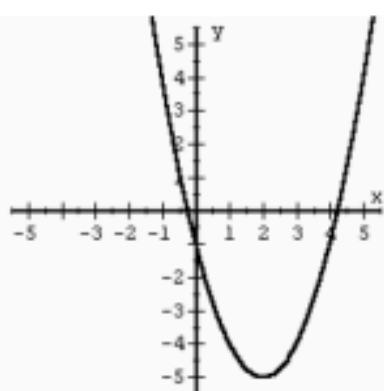
3.



Function?

State whether each graph represents a function or not.

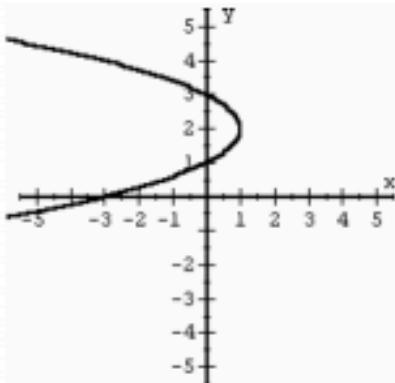
4.



$$y = (x - 2)^2 - 5$$

Function?

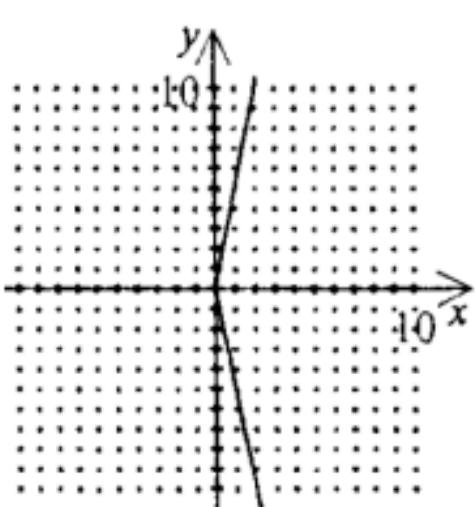
5.



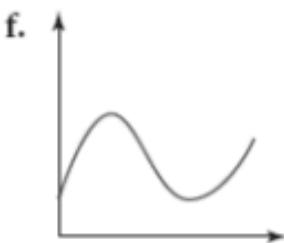
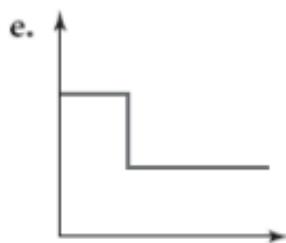
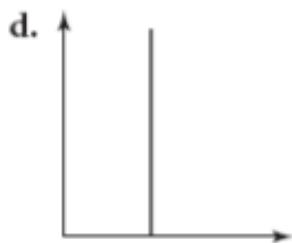
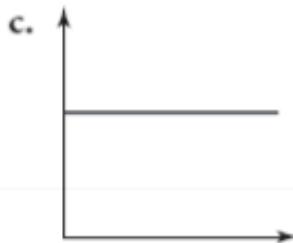
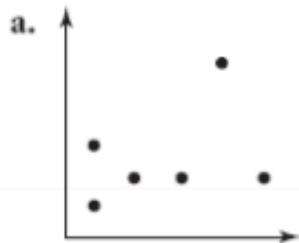
$$x = -(y - 2)^2 + 1$$

Function?

6.



7. Find whether each graph represents a function.



Explain how you know if a graph is a function or not:

8. Tell whether each table represents a function.

a.

Input	Output
1	4
2	3
3	4
4	3

b.

Input	Output
red	rose
blue	sky
yellow	sun
blue	ocean

c.

Input	Output
A	a
B	b
C	c
D	d

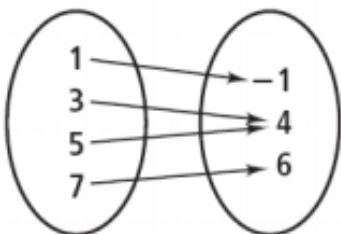
9. Tell whether each set of points represents a function.

a. $(-2, 3), (3, -2), (1, 3), (0, -2)$ b. $(3, -2), (-2, 3), (3, 1), (-2, 0)$

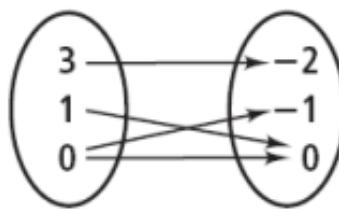
DOMAIN:	RANGE:	FUNCTION	DOMAIN:	RANGE:	FUNCTION
Yes/No			Yes/No		

10. Tell whether each mapping diagram represents a function.

a.



b.



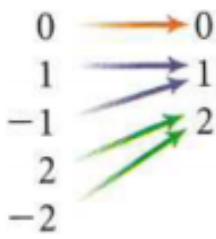
DOMAIN:	RANGE:	FUNCTION
Yes/No		

DOMAIN:	RANGE:	FUNCTION
Yes/No		

11.

For each diagram, list the domain and range, and state whether or not it is a function.

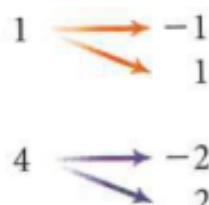
DOMAIN:



RANGE:

FUNCTION
Yes/No

DOMAIN:



RANGE:

FUNCTION
Yes/No

12. Tell whether each set of points represents a function or not.

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

② $\{(-7, 20), (3, 5), (0, 5), (-2, 0), (6, -4), (-6, -9), (4, 4)\}$

③ $\{(4, 8), (-3, -2), (9, 6), (2, -1), (-4, -5), (2, 7), (-8, 0)\}$

Part 2 – Using Functions

Evaluate the functions.

1. $f(x) = 12x + 1$

$$f(-2) =$$

$$f(0) =$$

$$f(3) =$$

2. $p(x) = -8x - 2$

$$p(-2) =$$

$$p(0) =$$

$$p(3) =$$

3. $m(x) = -6.5x$

$$m(-2) =$$

$$m(0) =$$

$$m(3) =$$

4. $s(x) = \frac{2}{5}x + 3$

$$s(-2) =$$

$$s(0) =$$

$$s(3) =$$

5. $h(x) = \frac{3}{4}x - 6$

$$h(-2) =$$

$$h(0) =$$

$$h(3) =$$

Find the value of x so that the function has the given value.

6. $g(x) = -x + 5$

Find x when $g(x) = 2$

7. $j(x) = 4x + 11$

Find x when $j(x) = 13$

8. $n(x) = -2x - 21$

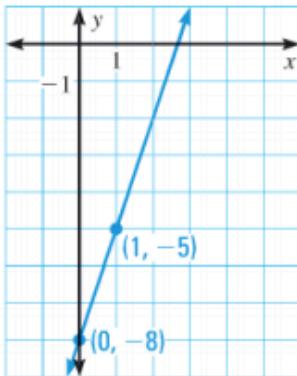
Find x when $n(x) = -6$

9. $q(x) = 8x - 32$

Find x when $q(x) = -4$

10. ★ MULTIPLE CHOICE The graph of which function is shown?

- (A) $f(x) = 3x + 8$
- (B) $f(x) = 3x - 8$
- (C) $f(x) = 8x + 3$
- (D) $f(x) = 8x - 3$

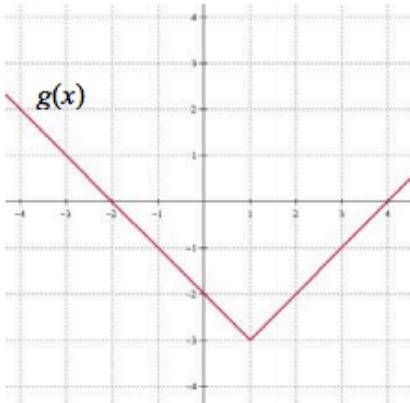


Use the given function to fill in the table.

11. $f(x) = 5 - 3x$

x	$f(x)$
-5	
$\frac{2}{3}$	
4.5	
	17

12.



x	$g(x)$
-3	
0	
3	
	-3

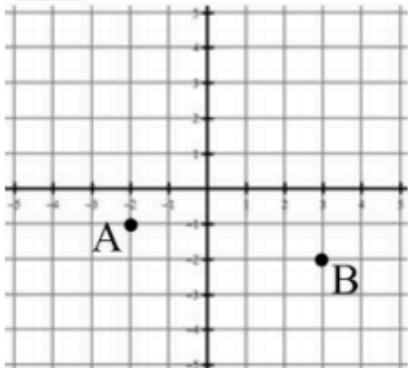
SKILLZ REVIEW

GRAPH

1. Describe how to move from point A to point B.

_____ units in the y direction (rise)

_____ units in the x direction (run)



2. Describe how to move from point C(0,3) to point D(2, -3).

SIMPLIFY

3. $3(2x - 3) - 5$

4. $5x - 6(x - 2)$

SOLVE

5. $\frac{x+1}{2} = 17$

6. $6x - 2 = 7x + 5$

7.2 Intro to Functions

APPLICATIONS

Evaluate the function.

1. $f(x) = 6 - 4x$

$f(2) =$

Find the value of x so that the function has the given value.

2. $g(x) = \frac{2}{3}x + 5$

$g(x) = -7$

Given $f(x) = \frac{2x-4}{3x}$ and $g(x) = 3x^2 - 3$ Find...

3. $f(2) =$

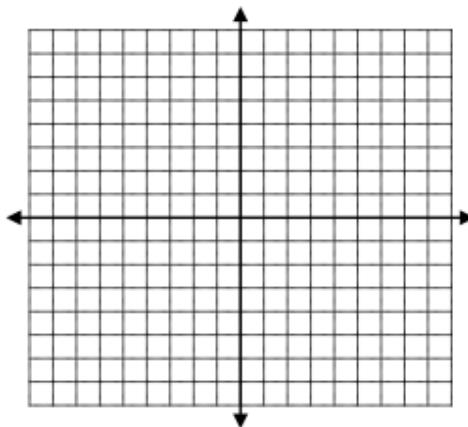
4. $g(-3) =$

5. $f(2) + g(0) =$

Model each rule with a table of values and a graph. (Not a line!)

6. $f(x) = x^2 - 3$

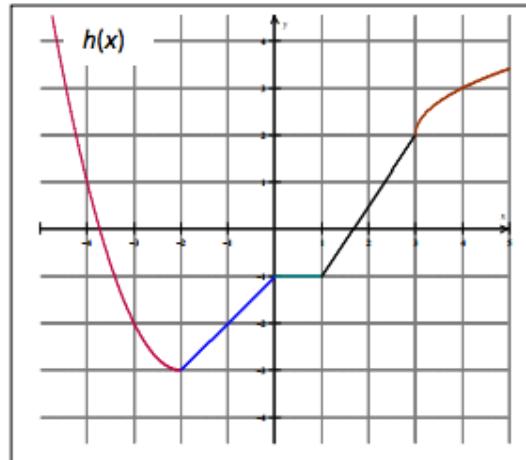
x	$f(x)$
-3	
-2	
-1	
0	
1	
2	
3	



Use the graph of $h(x)$ to answer the following:

7. a. $h(1) =$ b. $h(-1) =$ c. $h(0) =$

d. $h(4) =$ e. $h(-4) =$ f. $h(x) = -3$ find x



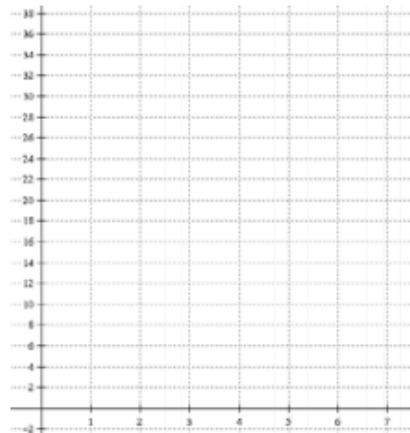
8. The Kaiserslautern Math Club (KMC) is booming with members. The club started with 4 dedicated members. Every year since, 5 more people join the club. Write an equation to represent the number of members in the math club over time.



- What is the initial value? Include units.
- What is the rate of change? Include units.
- Write the equation using function notation.

$$C(t) =$$

- Graph your line showing the first 6 years. Label the axes!



- Fill in the table

<i>t</i>	<i>C(t)</i>
0	
1	
2	
12	
	115

- Find $C(9.5)$.

g. What does $C(9.5)$ mean?

- Find $C(t) = 34$.

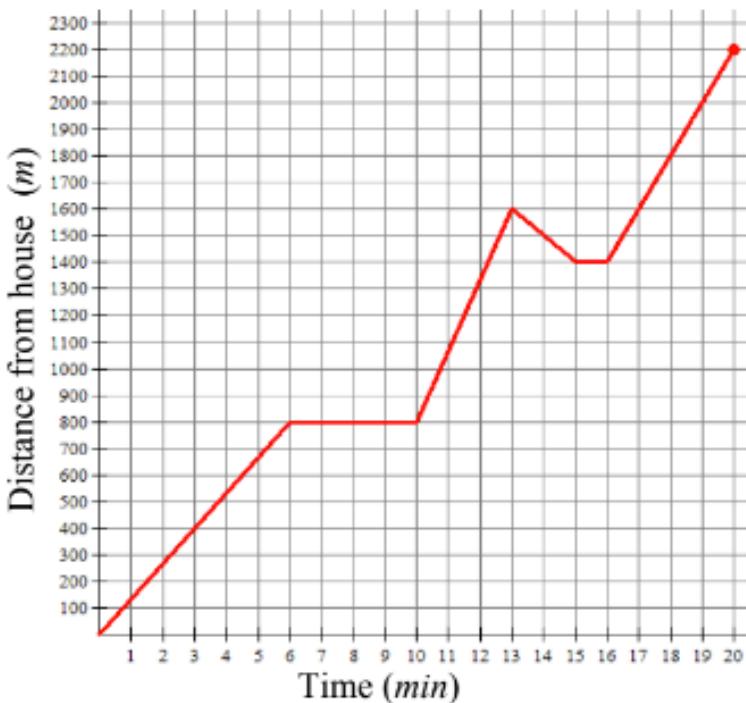
i. What does $C(t) = 34$ mean?

- The club's goal is to be a centurian math club which means have 100 math club members. When will this happen?

- Mr. Brust wants to know how many students will be in the KMC when he retires in 2033. If the club started in 2007, how many members will the KMC have?

9.

Running Man Mr. Brust likes to run to work. The table below shows the distance Mr. Brust is from his house over the course of his run.



_____	_____
(____)	(____)
3	
5	
7	
9	
	1100
	1600

The point $(18, 1800)$ means

Is this a function? Explain why or why not.

Find t , when $D(t) = 2200$. Then explain what these means base on the context of the problem.

Find $D(17)$. Then explain what these means base on the context of the problem.