5.5 Graphing Linear Functions

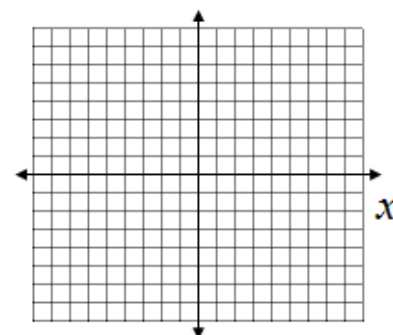Old Way $y = 2x + 1$ New Way $= 2x + 1$
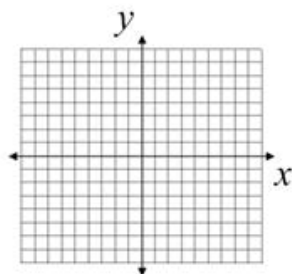
x	y
0	
1	
2	
	11

x	
0	
1	
2	
	11

ALGEBRA

Write your questions here!

$f(x)$ reads f of x:

FUNCTION NOTATION!

$$f(x) =$$

$f(3) =$
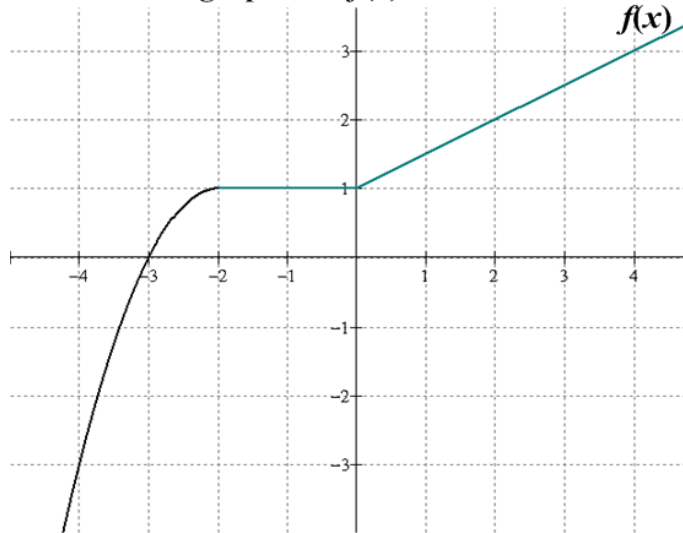
$f(-2) =$

$f(m) =$

$f(x) = 20$

$$f(x) =$$

x	$f(x)$
5	
8	
-2	
	15
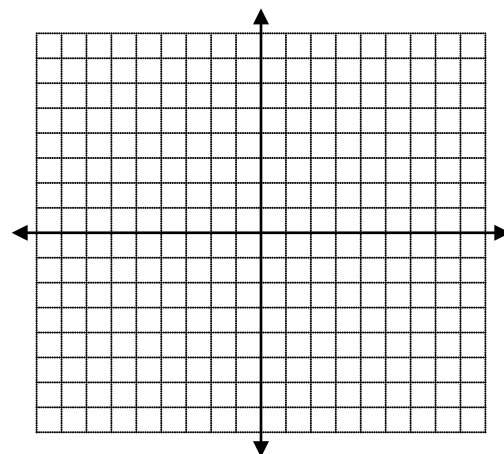
Given the graph is of f(x)
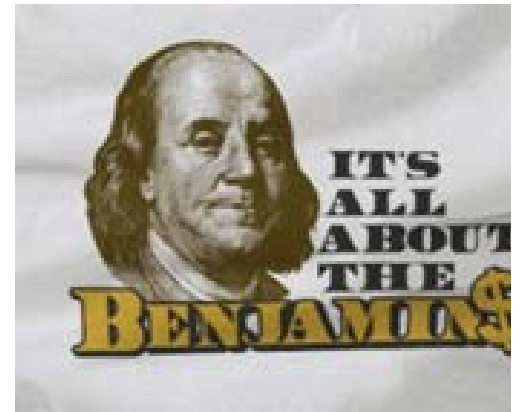

$f(4) =$

$f(0) =$

$f(-1) =$

$f(2) =$

$f(-3) =$

$f(x) = -3$

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

a. Read the notation.

b. Find $P(8)$.

c. What does $P(8)$ mean?

IT'S
ALL
ABOUT
THE
BENJAMIN$

d. What does $P(u) = 86,000$ mean?

SUMMARY:

Now,
summarize
your notes
here!

Evaluate the functions.

1. $f(x) = 12x + 1$	2. $p(x) = -8x - 2$	3. $m(x) = -6.5x$
$f(-2) =$	$p(-2) =$	$m(-2) =$
$f(0) =$	$p(0) =$	$m(0) =$
$f(3) =$	$p(3) =$	$m(3) =$

4. $s(x) = \frac{2}{5}x + 3$	5. $h(x) = \frac{3}{4}x - 6$
$s(-2) =$	$h(-2) =$
$s(0) =$	$h(0) =$
$s(3) =$	$h(3) =$

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

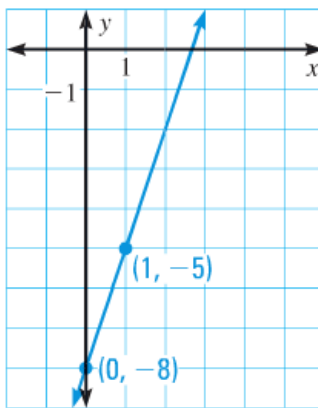|	
6. $g(x) = -x + 5$ Find x when $g(x) = 2$	7. $j(x) = 4x + 11$ Find x when $j(x) = 13$
8. $n(x) = -2x - 21$ Find x when $n(x) = -6$	9. $q(x) = 8x - 32$ Find x when $q(x) = -4$

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

Ⓐ $f(x) = 3x + 8$
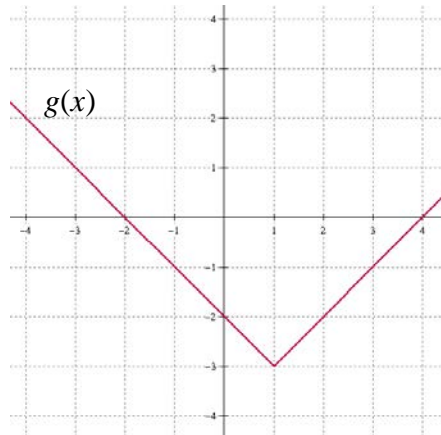
Ⓑ $f(x) = 3x - 8$

Ⓒ $f(x) = 8x + 3$

Ⓓ $f(x) = 8x - 3$

(1, −5)

(0, −8)

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.

g(x)

x	g(x)
-3	
0	
3	
	-3

SKILLZ REVIEW

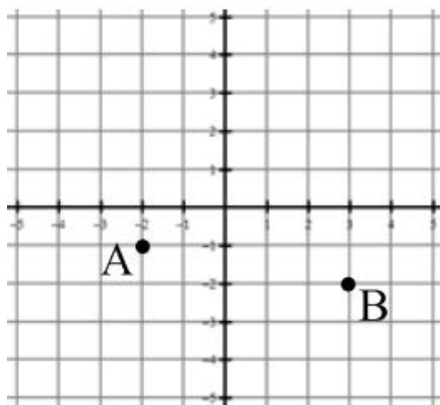| GRAPH	SIMPLIFY	SOLVE
1. Describe how to move from point A to point B. _____ units in the y direction (rise) _____ units in the x direction (run) 2. Describe how to move from point C(0,3) to point D(2, −3).	3. $3(2x - 3) - 5$ 4. $5x - 6(x - 2)$	5. $\frac{x+1}{2} = 17$ 6. $6x - 2 = 7x + 5$

Evaluate the function.

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

$f(2) =$

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

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

$g(x) = -7$

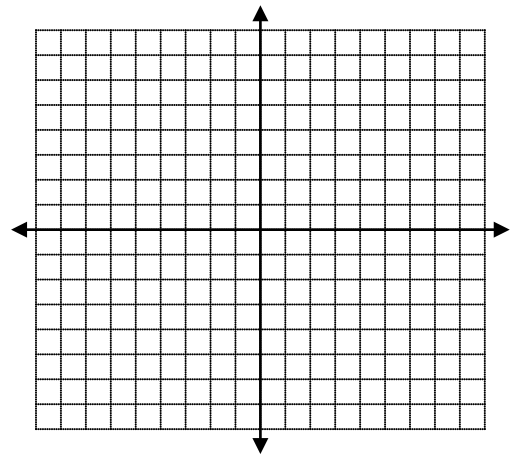**Given** $f(x) = \dfrac{2x - 4}{3x}$ **and** $g(x) = 3x^2 - 3$ **Find...**

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:
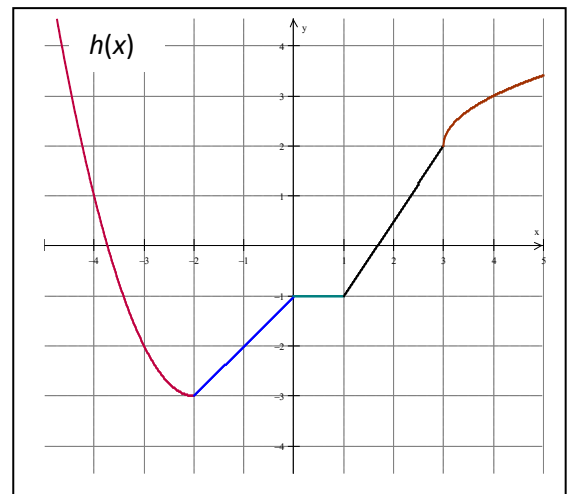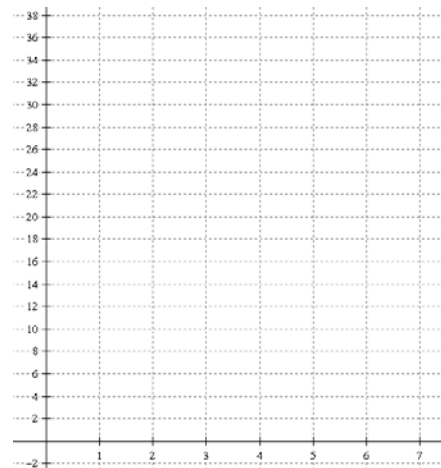
7. a. $h(1) =$

b. $h(-1) =$

c. $h(0) =$

d. $h(4) =$

e. $h(-4) =$

e. $h(x) = -3$ 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.

a. What is the initial value? Include units.

b. What is the rate of change? Include units.

c. Write the equation using function notation.

$$C(t) =$$

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

e. Fill in the table

t	$C(t)$
0	
1	
2	
12	
	115

f. Find $C(9.5)$.

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

h. Find $C(t) = 34$.

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

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

k. 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?