

Functions

NAME: _____

Function Notation

DATE: _____

1. Evaluate the following expressions given the functions below:

$$g(x) = -3x + 1$$

$$f(x) = x^2 + 7$$

$$h(x) = \frac{12}{x}$$

$$j(x) = 2x + 9$$

a. $g(10) =$

b. $f(3) =$

c. $h(-2) =$

d. $j(7) =$

e. $h(a) =$

f. $g(b+c) =$

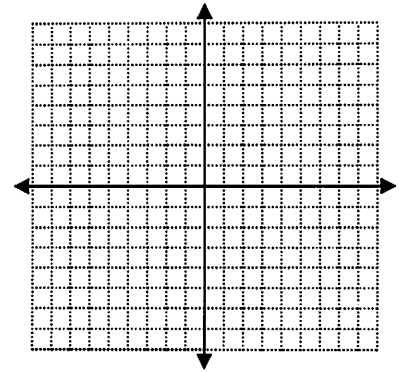
h. Find x if $g(x) = 16$

i. Find x if $h(x) = -2$

j. Find x if $f(x) = 23$

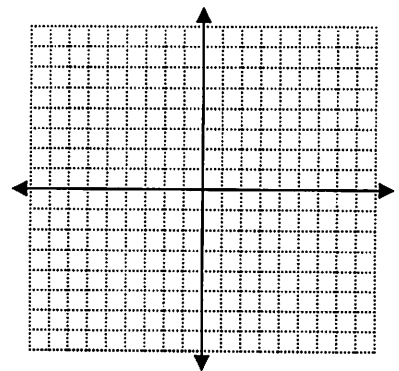
2. Given $f(x) = 3 - 4x$. Fill in the table and then sketch a graph.

x	$f(x)$
-6	
-3	
0	
1	
	-5



3. Given $f(x) = \sqrt{x+1}$. Fill in the table and then sketch a graph.

x	$f(x)$
3	
0	
-10	
2	
	6



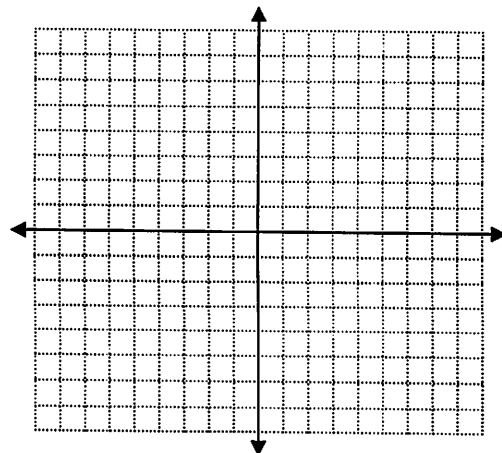
4. Translate the following statements into coordinate points, then plot them!

a. $f(-1) = 1$

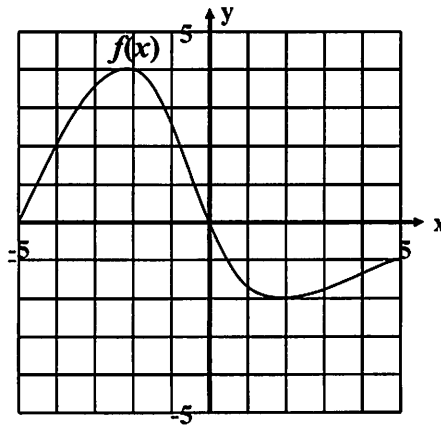
b. $f(2) = 7$

c. $f(1) = -1$

d. $f(3) = 0$



5. Given this graph of the function $f(x)$:



Find:

a. $f(-4) =$

b. $f(0) =$

c. $f(3) =$

d. $f(-5) =$

e. x when $f(x) = 2$

f. x when $f(x) = 0$

6. Find an equation of a linear function given $h(1) = 6$ and $h(4) = -3$.
 (NOTE: Same as write the equation of the line given two points!)

APPLICATION

7. Swine flu is attacking Porkopolis. The function below determines how many people have swine where $t =$ time in days and $S =$ the number of people in thousands.

$$S(t) = 9t - 4$$

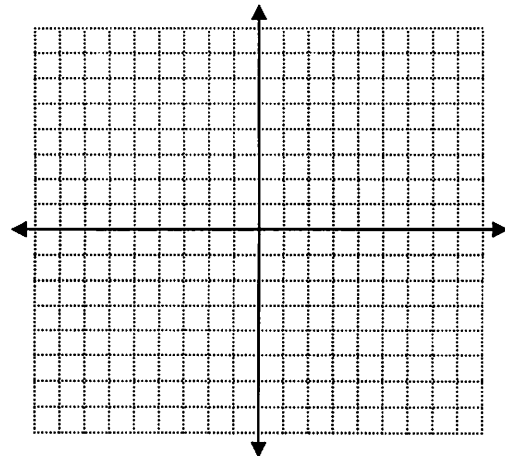
a. Find $S(4)$.

b. What does $S(4)$ mean?

c. Find t when $S(t) = 23$.

d. What does $S(t) = 23$ mean?

e. Graph the function.



Functions

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1. Evaluate the following expressions given the functions below:

$g(x) = -3x + 1$

$f(x) = x^2 + 7$

$h(x) = \frac{12}{x}$

$j(x) = 2x + 9$

a. $g(10) = -29$

b. $f(3) = 16$

c. $h(-2) = -6$

d. $j(7) = 23$

e. $h(a) = \frac{12}{a}$

f. $g(b+c) = -3(b+c) + 1$
 $-3b - 3c + 1$

h. Find x if $g(x) = 16$

$$\begin{array}{r} 16 = -3x + 1 \\ -1 \quad -1 \\ \hline 15 = -3x \\ \frac{15}{-3} = \frac{-3x}{-3} \\ -5 = x \end{array}$$

i. Find x if $h(x) = -2$

$$\begin{array}{r} \frac{12}{x} = -\frac{2}{1} \\ -2x = 12 \\ \frac{-2x}{-2} = \frac{12}{-2} \\ x = -6 \end{array}$$

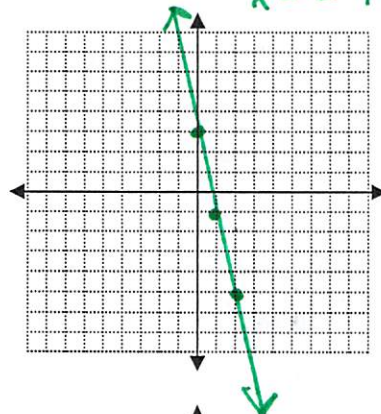
j. Find x if $f(x) = 23$

$$\begin{array}{r} x^2 + 7 = 23 \\ -7 \quad -7 \\ \hline x^2 = 16 \\ x = \pm 4 \end{array}$$

2. Given $f(x) = 3 - 4x$. Fill in the table and then sketch a graph.

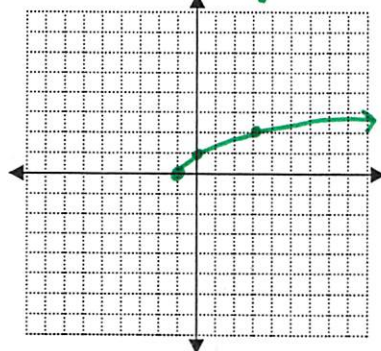
$$\begin{array}{r} 3 - 4x = -5 \\ -3 \quad -3 \\ \hline -4x = -8 \\ \frac{-4x}{-4} = \frac{-8}{-4} \\ x = 2 \end{array}$$

x	$f(x)$
-6	27
-3	18
0	3
1	-1
2	-5



3. Given $f(x) = \sqrt{x+1}$. Fill in the table and then sketch a graph.

x	$f(x)$
3	2
0	1
-10	-
2	$\sqrt{3}$
35	6



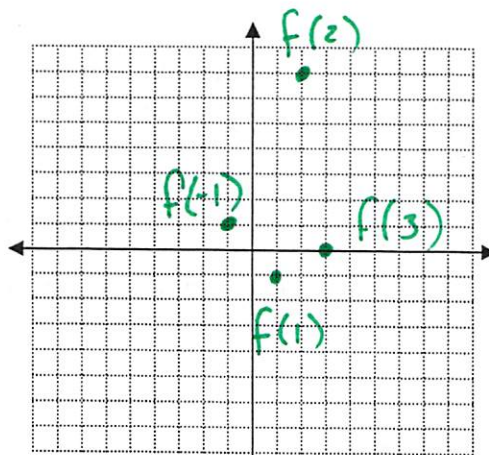
4. Translate the following statements into coordinate points, then plot them!

a. $f(-1) = 1$

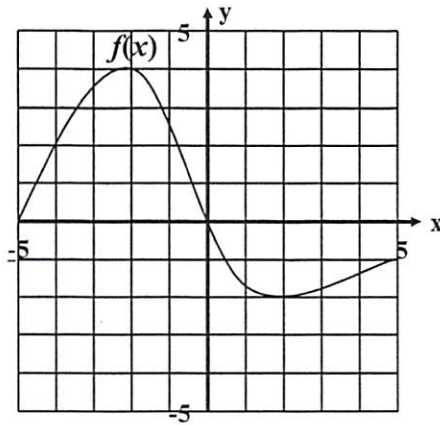
b. $f(2) = 7$

c. $f(1) = -1$

d. $f(3) = 0$



5. Given this graph of the function $f(x)$:



Find:

a. $f(-4) = 2$

b. $f(0) = 0$

c. $f(3) = -1.8$

d. $f(-5) = 0$

e. x when $f(x) = 2$ -4 and -0.7

f. x when $f(x) = 0$ -5 and 0

6. Find an equation of a linear function given $h(1) = 6$ and $h(4) = -3$.

(NOTE: Same as write the equation of the line given two points!)

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$(1, 6)$ $(4, -3)$

$$y = 3x + b$$

$$m = \frac{6 - (-3)}{1 - 4} = \frac{9}{-3} = -3$$

$$6 = 3(1) + b$$

$$-3 = b$$

$$y = 3x - 3$$

APPLICATION

7. Swine flu is attacking Porkopolis. The function below determines how many people have swine where $t =$ time in days and $S =$ the number of people in thousands.

$$S(t) = 9t - 4$$

a. Find $S(4)$.

$$9(4) - 4$$

$$32 \text{ Thousand}$$

b. What does $S(4)$ mean?

In 4 days 32 Thousand people will have flu

c. Find t when $S(t) = 23$.

$$23 = 9t - 4$$

$$27 = 9t$$

$$3 = t$$

d. What does $S(t) = 23$ mean?

In 3 days 23000 people will be infected

e. Graph the function.

