

TOPIC C: Function Notation

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

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

$x = -5$

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

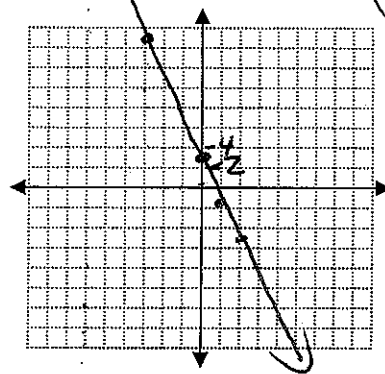
$x = -6$

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

~~$x = 7$~~
 $23 = x^2 + 7$
 $\sqrt{16} = \sqrt{x^2}$
 $x = \pm 4$

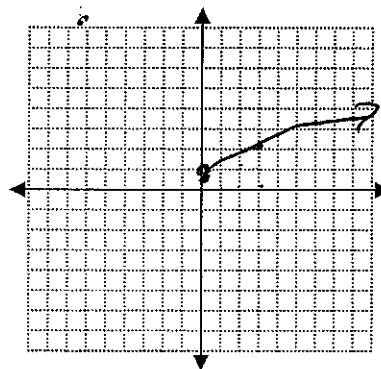
2. Given $f(x) = 3 - 4x$. Fill in the table and then sketch a graph.

x	f(x)
-6	27
-3	15
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	3i ← can't graph.
2	$\sqrt{3}$
35	6



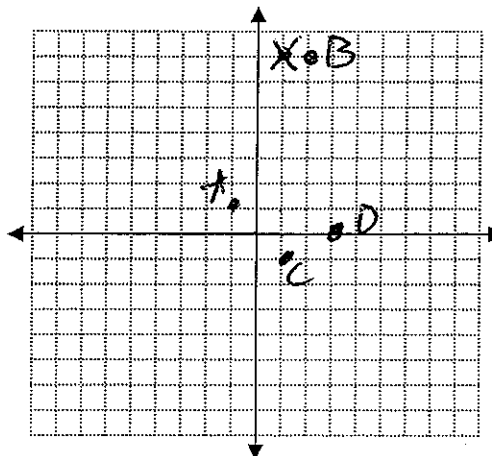
4. Translate the following statements into coordinate points, then plot them!

a. $f(-1) = 1$

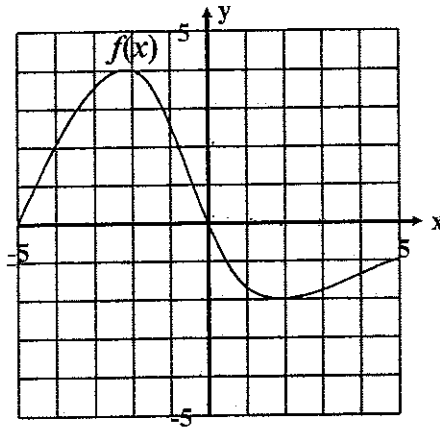
b. $f(2) = 7$

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. $f(3) = -1.8$

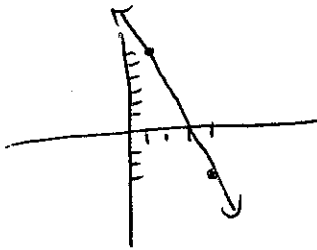
d. $f(-5) = -1$

e. x when $f(x) = 2$
 -4 and -0.8

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

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!)



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

$$y - y_1 = m(x - x_1)$$

$$y - 6 = -3(x - 1)$$

$$y = -3x + 9$$

APPLICATION

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

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

a. Find $S(4) = 32$

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

In 4 days 32 thousand are sick.

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

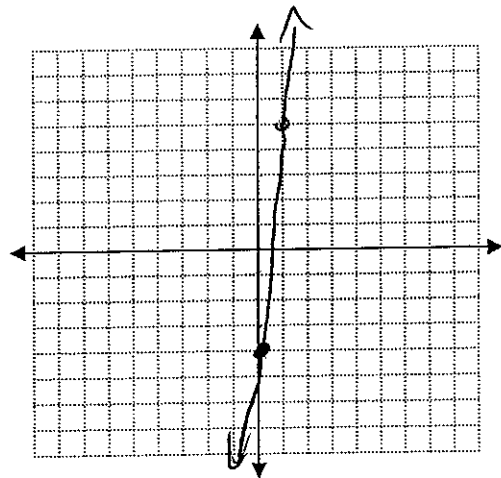
$$23 = 9t - 4$$

$$t = 3$$

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

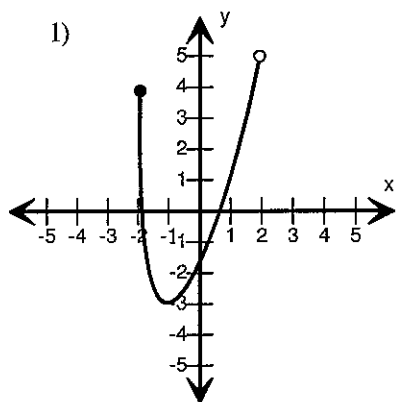
23 thousand are sick after 3 days.

e. Graph the function.



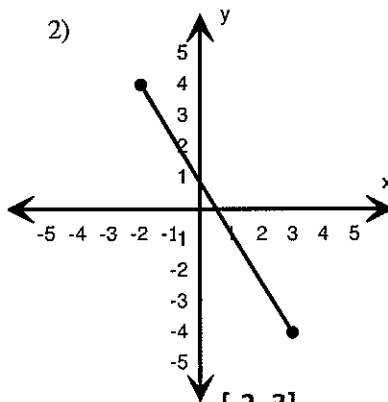
Answer Key

Find the Domain and Range for each graph.



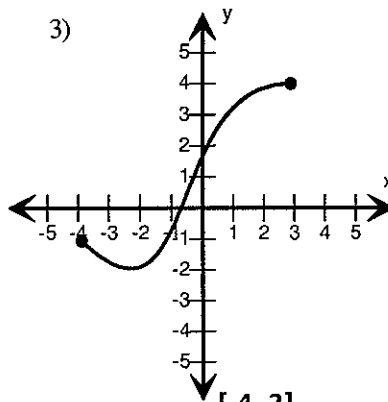
Domain : [-2, 2]

Range : [-3, 5]



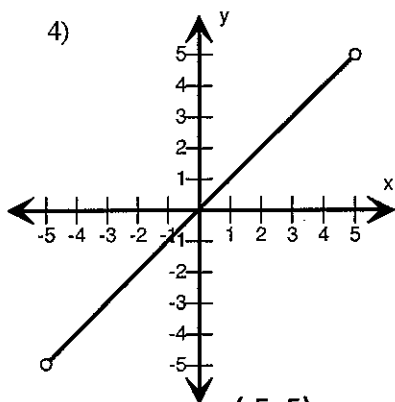
Domain : [-2, 3]

Range : [-4, 4]



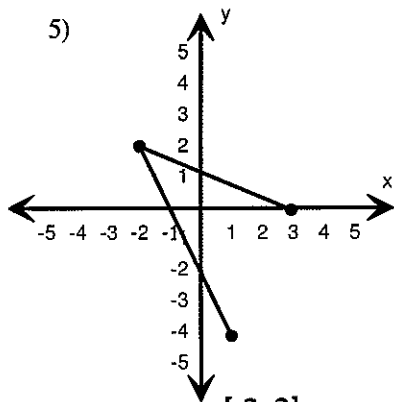
Domain : [-4, 3]

Range : [-2, 4]



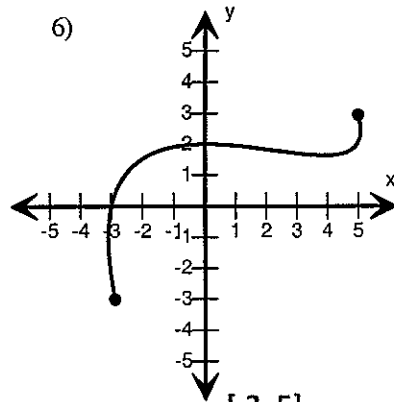
Domain : (-5, 5)

Range : (-5, 5)



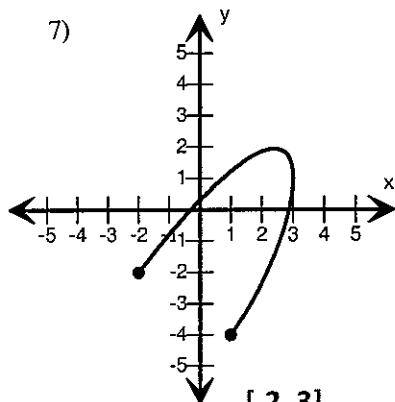
Domain : [-2, 3]

Range : [-4, 2]



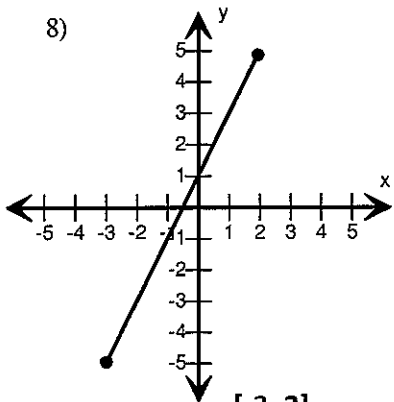
Domain : [-3, 5]

Range : [-3, 3]



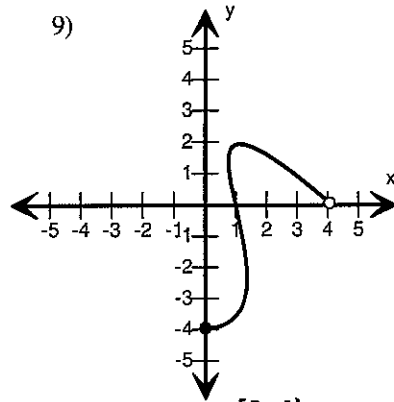
Domain : [-2, 3]

Range : [-4, 2]



Domain : [-3, 2]

Range : [-5, 5]

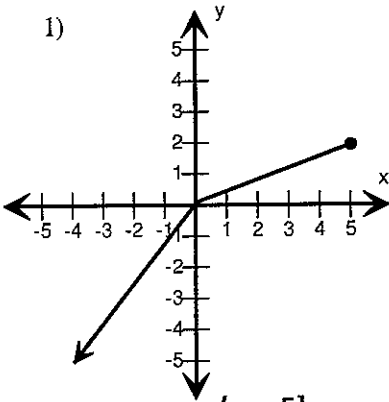


Domain : [0, 4]

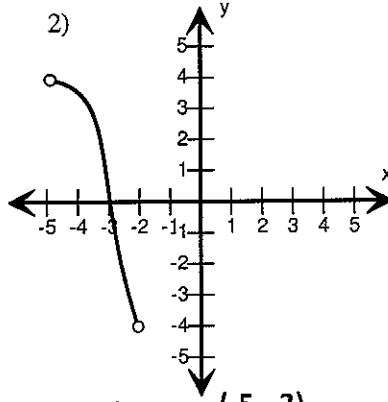
Range : [-4, 2]

Answer Key

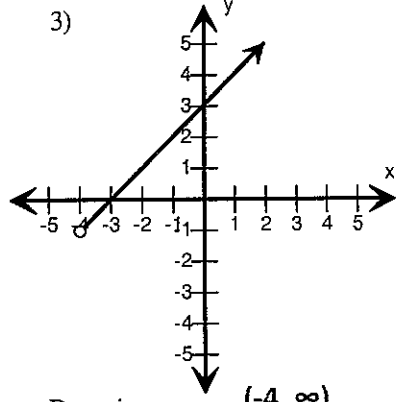
Find the Domain and Range for each graph.



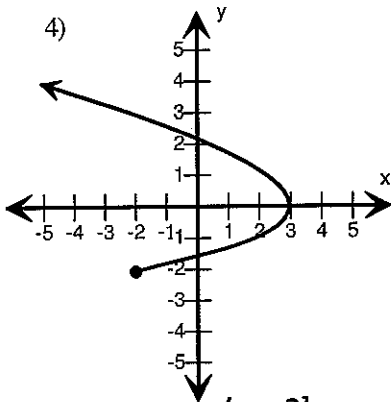
Domain: $(-\infty, 5]$
 Range: $(-\infty, 2]$



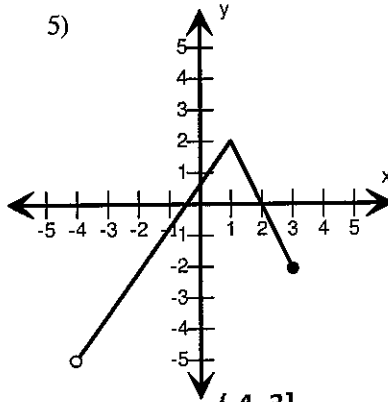
Domain: $(-5, -2)$
 Range: $(-4, 4)$



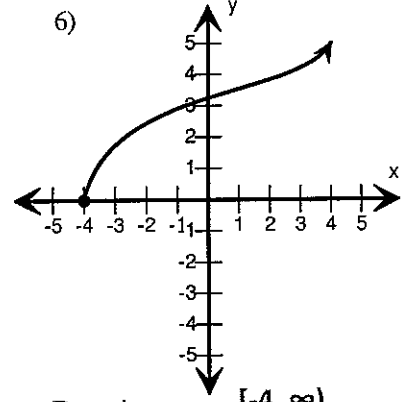
Domain: $(-4, \infty)$
 Range: $(-1, \infty)$



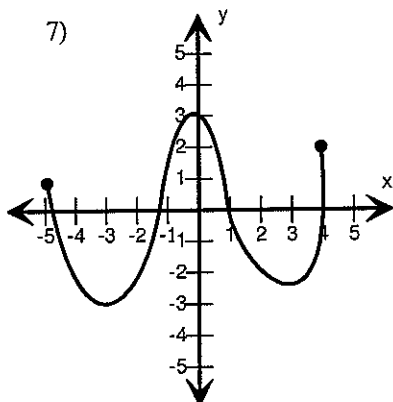
Domain: $(-\infty, 3]$
 Range: $[-2, \infty)$



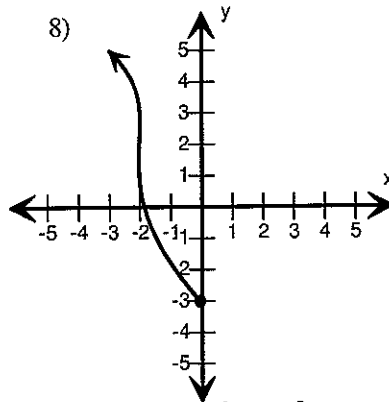
Domain: $(-4, 3]$
 Range: $(-5, 2]$



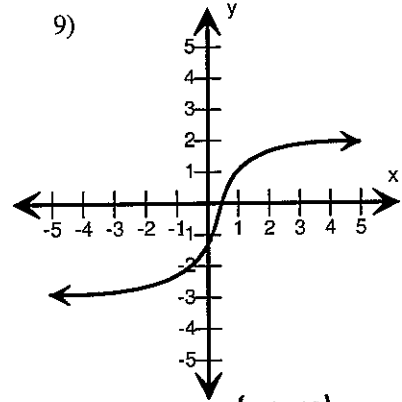
Domain: $[-4, \infty)$
 Range: $[0, \infty)$



Domain: $[-5, 4]$
 Range: $[-3, 3]$



Domain: $(-\infty, 0]$
 Range: $[-3, \infty)$



Domain: $(-\infty, \infty)$
 Range: $(-\infty, \infty)$