

Function Notation

DA'I E:

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. $g(10) = -3(10) + 1$
 $(10, -29)$

b. $f(3) = (3)^2 + 7$
 $f(3) = 16 \quad (3, 16)$

c. $h(-2) = \frac{12}{-2} \quad (-2, -6)$
 $h(-2) = -6$

d. $j(7) = 2(7) + 9$
 $(7, 23)$

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

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

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

$$\begin{aligned} 16 &= -3x + 1 \\ 15 &= -3x \\ -5 &= x \end{aligned}$$

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

$$\begin{aligned} -2 &= \frac{12}{x} \quad (-6, -2) \\ -2x &= 12 \\ x &= -6 \end{aligned}$$

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

$$\begin{aligned} 23 &= x^2 + 7 \\ 16 &= x^2 \\ 4 &= x \end{aligned}$$

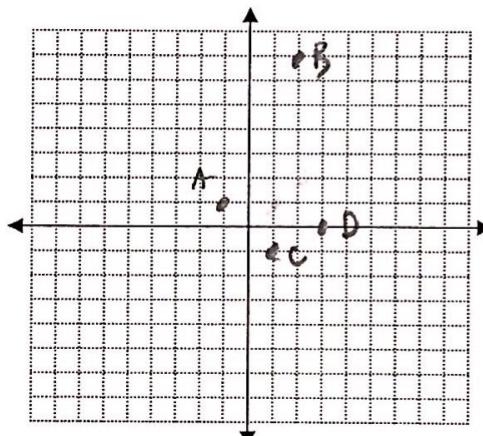
2. Change the following statements into coordinate points and then plot them!

a. $f(-1) = 1$

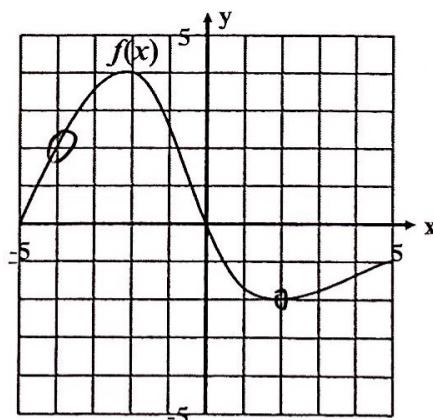
b. $f(2) = 7$

c. $f(1) = -1$

d. $f(3) = 0$



3. 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 $f(x) = -2$

2 -2

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

APPLICATION

4. Swine flu is attacking the North Pole. The function below determines how many elves have swine flu 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)

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

people in thousands after 4 days

c. Find t when $S(t) = 23$.
 $23 = 9t - 4$
 $(3 = t)$

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

days until 23 thousand people are sick

e. Graph the function.

$$y = mx + b$$
$$y = 9t - 4$$

