Name _____ **Date** _____ **Period** ____

Standards: *MGSE9-12.F.IF.2* Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.

Essential Question: What does it mean to evaluate a function?

Function Notation

1. Evaluate the following expressions given the functions below:

$$g(x) = -3x + 1 \qquad f(x) = x^2 + 7 \qquad h(x) = \frac{12}{x} \qquad j(x) = 2x + 9$$

    a. $g(10) =$

          f. $g(b+c)$

    b. $f(3) =$

          g. $f(h(x))$

    c. $h(-2) =$

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

    d. $j(7) =$

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

    e. $h(a)$

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

2. Translate the following statements into coordinate points:

    a. $f(-1) = 1$ **c.** $g(1) = -1$

    b. $h(2) = 7$ **d.** $k(3) = 9$
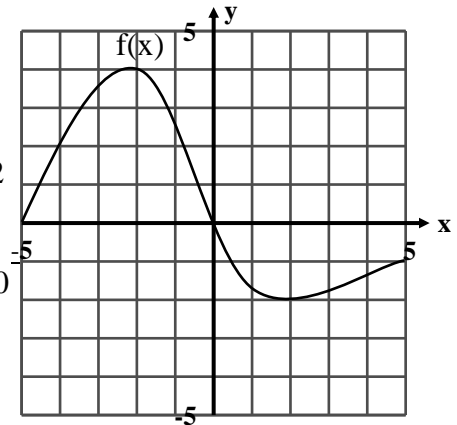
3. Given this graph of the function f(x):

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

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

APPLICATION

5. 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