

Name Key Hour \_\_\_\_\_ Score \_\_\_\_\_

**Evaluating Functions**

+ p143; 31-34  
(3)

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

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

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

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

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

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

g.  $f(h(x)) = \left(\frac{12}{x}\right)^2 + 7 = \frac{144}{x^2} + 7$

h. Find x if  $g(x) = 16$        $-3x + 1 = 16$        $-3x = 15$        $x = -5$

i. Find x if  $h(x) = -2$        $\frac{12}{x} = -2$        $-2x = 12$        $x = -6$

j. Find x if  $f(x) = 23$        $x^2 + 7 = 23$        $x^2 = 16$        $x = 4, -4$

2. Translate the following statements into coordinate points:

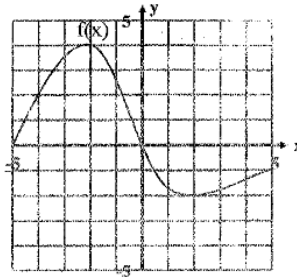
a.  $f(-1) = 1$        $(-1, 1)$

b.  $h(2) = 7$        $(2, 7)$

c.  $g(1) = -1$        $(1, -1)$

d.  $k(3) = 9$        $(3, 9)$

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



Find:

a.  $f(-4) = 2$       b.  $f(0) = 0$       c.  $f(3) = -1.7$       d.  $f(-5) = 0$

e.  $x$  when  $f(x) = 2$       f.  $x$  when  $f(x) = 0$

$x = -4, 2.8$

$x = -5, 0$

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

$x$	$y$
1	6
2	3
3	0
4	-3

$(1, 6)$      $(4, -3)$

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

$h(x) = -3x + 9$