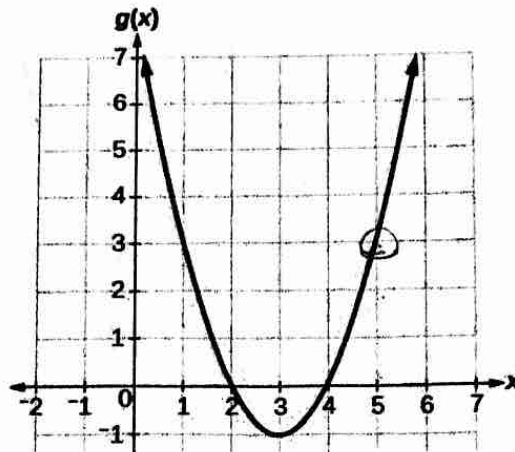


Name: \_\_\_\_\_

Date: \_\_\_\_\_

Evaluating Functions Review Warm-UpGiven the following functions below ( $f(x)$ ,  $g(x)$ , and  $h(x)$ ), evaluate.

$x$	$f(x)$
-4	-10
-2	-4
0	2
2	8
4	14



$$h(x) = x^2 - 3x + 1$$

$$j(x) = |x - 6| + 1$$

$$k(x) = \frac{1}{2}x - 5$$

Find:

1)  $f(2) = \boxed{8}$

2)  $g(5) = \boxed{3}$

$$3) h(3) = 3^2 - 3(3) + 1$$

$$9 - 9 + 1$$

$$0 + 1$$

$$\boxed{1}$$

4)  $f(x) = -4$

$$f(-2) = -4$$

$$\boxed{x = -2}$$

5)  $g(x) = 3$

$$g(1) = 3$$

$$g(5) = 3$$

$$\boxed{x = 1 \text{ and } x = 5}$$

6)  $h(-4) =$

$$(-4)^2 - 3(-4) + 1$$

$$16 + 12 + 1$$

$$28 + 1$$

$$\boxed{29}$$

7)  $j(4) =$

$$|4 - 6| + 1$$

$$|-2| + 1$$

$$2 + 1$$

$$\boxed{3}$$

8)  $k(x) = 2$

$$2 = \frac{1}{2}x - 5$$

$$7 = \frac{1}{2}x$$

$$\boxed{14 = x}$$

9)  $j(x) = 4$

$$4 = |x - 6| + 1$$

$$3 = |x - 6|$$

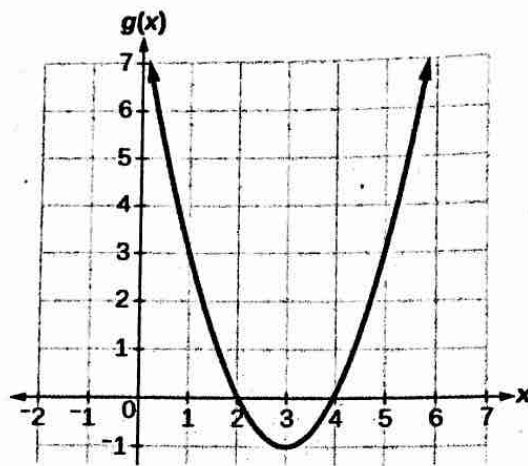
$$3 = x - 6 \text{ and } -3 = x - 6$$

$$9 = x$$

$$3 = x$$

x	f(x)
-4	-10
-2	-4
0	2
2	8
4	14

$$10) g(4) = \boxed{0}$$



$$11) k(-6a) =$$

$$\frac{1}{2}(-6a) - 5$$

$$\boxed{-3a - 5}$$

$$12) k(2b + 8) =$$

$$\frac{1}{2}(2b + 8) - 5$$

$$b + 4 - 5$$

$$\boxed{b - 1}$$

$$13) h(3a) =$$

$$(3a)^2 - 3(3a) + 1$$

$$\boxed{9a^2 - 9a + 1}$$

$$14) j(x) = -5$$

$$-5 = |x - 6| + 1$$

$$-6 = |x - 6|$$

$$\boxed{\emptyset}$$

$$15) h(a + 2) =$$

$$(a + 2)^2 - 3(a + 2) + 1$$

$$a^2 + 4a + 4 - 3a - 6 + 1$$

$$\boxed{a^2 + a - 1}$$

$$h(x) = x^2 - 3x + 1$$

$$j(x) = |x - 6| + 1$$

$$k(x) = \frac{1}{2}x - 5$$

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Factoring Practice

Factor each of the following. If not factorable, write prime.

1)  $15a + 25b$

$$5(3a + 5b)$$

3)  $(6ax - 14x) + 15a - 35$

$$2x(3a - 7) + 5(3a - 7)$$

$$(2x + 5)(3a - 7)$$

5)  $x^2 - 16$

$$(x + 4)(x - 4)$$

7)  $(x^3 + 4x^2) + (6x + 24)$

$$x^2(x + 4) + 6(x + 4)$$

$$(x^2 + 6)(x + 4)$$

9)  $4x^2 - 25$

$$(2x + 5)(2x - 5)$$

11)  $(x^3 + 2x^2) + (36x - 72)$

$$x^2(x + 2) - 36(x + 2)$$

$$(x + 6)(x - 6)(x + 2)$$

13)  $4x^2 + 9$

Prime

2)  $7c^3 - 28c^2d + 35cd^2$

$$7c(c^2 - 4cd + 5d^2)$$

4)  $(6b^4 + 5b^3) - (24b - 20)$

$$b^3(6b + 5) - 4(6b + 5)$$

$$(b^3 - 4)(6b + 5)$$

6)  $x^2 - 64$

$$(x + 8)(x - 8)$$

8)  $(2x^3 + 3x^2) - (50x - 75)$

$$x^2(2x + 3) - 25(2x + 3)$$

$$(x + 5)(x - 5)(2x + 3)$$

10)  $9x^2 - 49$

$$(3x + 7)(3x - 7)$$

12)  $(c^4 + c^3) - (12c - 12)$

$$c^3(c + 1) - 12(c + 1)$$

$$(c^3 - 12)(c + 1)$$

14)  $25a^2 - 36b^2$

$$(5a + 6b)(5a - 6b)$$

$$15) (a^3 + 6a^2) - 4a - 24$$

$$a^2(a+6) - 4(a+6)$$

$$(a+2)(a-2)(a+6)$$

$$17) 5x^2 - 5$$

$$5(x^2 - 1)$$

$$5(x+1)(x-1)$$

$$19) 3y^3 - y^2 - 21y + 7$$

$$y^2(3y-1) - 7(3y-1)$$

$$(y^2-7)(3y-1)$$

$$21) 5x^2 - 180$$

$$5(x^2 - 36)$$

$$5(x+6)(x-6)$$

$$23) 6x^2 + 3x - 4x - 2$$

$$3x(2x+1) - 2(2x+1)$$

$$(3x-2)(2x+1)$$

$$25) 3x^2y - 27y^3$$

$$3y(x^2 - 9y^2)$$

$$3y(x+3y)(x-3y)$$

$$27) y^6 - 9y^4 + 16y^2 + 144$$

$$y^4(y^2-9) - 16(y^2-9)$$

$$(y^4-16)(y^2-9)$$

$$(y^2+4)(y+2)(y^2-9)(y+3)(y-3)$$

$$16) (t^3 + t^2) - 16t - 16$$

$$t^2(t+1) - 16(t+1)$$

$$(t+4)(t-4)(t+1)$$

$$18) 8x^3y - 32xy$$

$$8xy(x^2-4)$$

$$8xy(x+2)(x-2)$$

$$20) x^3 - 3x^2 + x - 3$$

$$x^2(x-3) + 1(x-3)$$

$$(x^2+1)(x-3)$$

$$22) x^3y - xy^3$$

$$xy(x^2-y^2)$$

$$xy(x+y)(x-y)$$

$$24) x^3 - 5x^2 + 4x - 20$$

$$x^2(x-5) + 4(x-5)$$

$$(x^2+4)(x-5)$$

$$26) 32a^9 + 16a^5 + 24a^3$$

$$8a^3(4a^6 + 2a^2 + 3)$$

$$28) 40x^3y - 90xy^3$$

$$10xy(4x^2-9y^2)$$

$$10xy(2x+3y)(2x-3y)$$