

## Bell Ringer

### Section 2.6

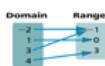
1. Identify the domain and range of the relation  $\{(-2, -1), (1, 0), (3, -1), (4, 3)\}$ . Represent the relation with a mapping diagram. Is the relation a function?
2. Is the relation below a function? Use the vertical line test.  
 $\{(-5, 2), (-1, 0), (3, 3), (-2, -8), (4, 5)\}$
3. The function  $Y(x) = \frac{1}{2}x$  represents the number of pints  $Y(x)$  in  $x$  cups. How many pints are there in 1 gallon? (Hint: 1 gallon = 16 cups)
4. What is the range of  $f(x) = -3x + 8$  with domain  $\{5, 10, 15, 20\}$ ?
5. Write the linear function to describe: Mike earns \$11.50 an hour.

Section 2.6

## Bell Ringer Key

1. Identify the domain and range of the relation  $\{(-2, -1), (1, 0), (3, -1), (4, 3)\}$ . Represent the relation with a mapping diagram. Is the relation a function?

The domain is  $\{-2, 1, 3, 4\}$ . The range is  $\{-1, 0, 3\}$ . The relation is a function.



2. Is the relation below a function? Use the vertical line test. **Yes**

$\{(-5, 2), (-1, 0), (3, 3), (-2, -8), (4, 5)\}$

3. The function  $Y(x) = \frac{1}{2}x$  represents the number of pints  $Y(x)$  in  $x$  cups. How many pints are there in 1 gallon? (Hint: 1 gallon = 16 cups)

**8**

4. What is the range of  $f(x) = -3x + 8$  with domain  $\{5, 10, 15, 20\}$ ?

**$\{-7, -22, -37, -52\}$**

5. Write the linear function to describe: Mike earns \$11.50 an hour.

**$y = 11.5x$**

correct 2.5 #s 7-12 all, 13-19 odds, 20

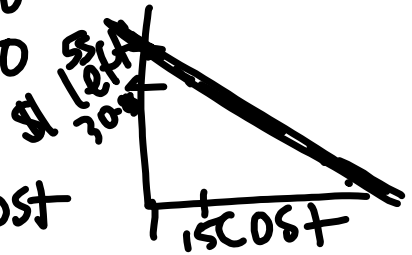
19

x cost	y left	\$55.00
15	55 - 15 - 2.25	37.75
21	55 - 21 - 3.15	30.85
24	55 - 24 - 3.60	27.40
30	55 - 30 - 4.50	20.50

15% of 15  
 $(.15)(15)$

100% 15%  
 $55 - 115\% \text{ cost}$

b)  $m = 55 - 1.15c$



HW 2.5 #s 7-12 all, 13-19 odds and 20

7.  $C = 3.57p$

8.  $f = \frac{h}{12}$

9.  $y = x + 2$

10.  $V = (d + 1)^3$

11. dependent,  $a$ ; independent,  $b$ 12. You can't add holes and minutes. The correct rule is  $t = 15n$ .

13. Continuous; side length and area can be any positive real numbers.

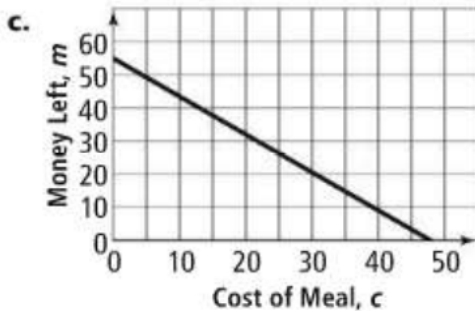
15. Answers may vary. Sample: The rule covers all values, whereas the table only represents some of the values.

17.  $d = -3.5 - 1.8s$ ;  $-435.5$  m

19. a.

Cost of Meal	\$15	\$21	\$24	\$30
Money Left	\$37.75	\$30.85	\$27.40	\$20.50

b.  $m = 55 - 1.15c$



20. a.  $b = 42.95d + 45.60$

b. \$432.15

# Evaluating Functions

$$h(a) = \underline{-2a}; \text{ Find } h(-1)$$

$$h(-1) = -2(-1) \\ = 2$$

Write as an ordered pair

$$(-1, 2)$$

Find  $h(k)$

$$h(k) = -2k$$

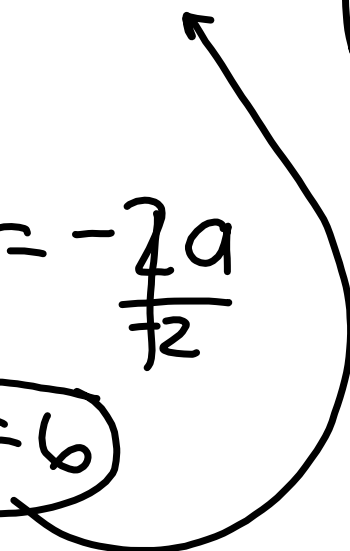
$$(k, -2k)$$

Find  $a$  if  $h(a) = -12$

*output*

$$h(a) = -2a$$
$$h(b) = -12$$
$$\frac{-12}{-2} = \frac{-2a}{\cancel{-2}}$$

$a = b$



$$f(x) = x + 5: \text{ Find } f(6)$$

$$f(6) = 6 + 5 = 11$$

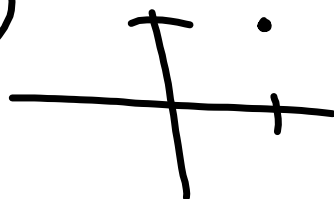
$$f(6) = 11$$

Write as an ordered pair

$$(6, 11)$$

$$f(5) = 10$$

$$f(4) = 9$$



Find  $f(b-c)$

$$f(b-c) = b - c + 5$$

$$(b-c, b-c+5)$$



$$f(x) = x + 5$$

Find  $x$  if  $f(x) = 31$

$$26 = x$$

$$f(26) = 31$$

$$g(\underline{a}) = 2\underline{a} + 1; \text{ Find } g(4)$$

$$g(4) = 2(4) + 1 = 9$$

$$(4, 9)$$

$$g(1) = 2(1) + 1 = 3$$

$$(1, 3)$$

Write as an ordered pair

Find  $g(a+b)$

$$g(a+b) = 2(a+b) + 1$$
$$2a + 2b + 1$$

$$(a+b, 2a+2b+1)$$

$$g(\cancel{a}) = 2(\cancel{a}) + 1$$

Find a if  $g(a) = 25$

$$25 = 2a + 1$$

$$\frac{24}{2} = \frac{2a}{2}$$

$$12 = a$$

$$h(\cancel{5}) = \frac{15}{2(\cancel{5})} \quad \text{Find } h(\cancel{5})$$

$$h(5) = \frac{15}{10} = \frac{3}{2} \quad h(5) = (5, \frac{3}{2})$$

$$(ab, \frac{15}{2(ab)})$$

Write as an ordered pair

$$h(\cancel{3}) = 10 \quad (3, 10)$$

$$\text{Find } h(ab) \\ h(ab) = \frac{15}{2(ab)}$$

$$h(x) = 3x + 1$$

$$g(x) = 5x - 2$$

$$f(x) = 2x^2$$

$$f(x) = x + 3 \quad \text{and} \quad g(x) = 2x - 4$$

Find  $f(g(x))$

$$f(2x-4) = x + 3$$

$$(2x-4) + 3$$

$$f(g(x)) = 2x - 1$$

Find  $g(f(x))$

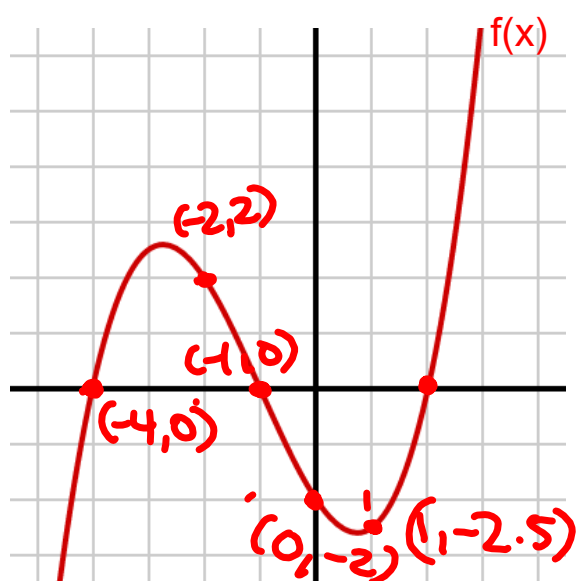
$$g(x+3) = 2x - 4$$

$$2(x+3) - 4$$

$$2x + 6 - 4$$

$$= 2x + 2$$

→



The graph  $f(x)$  is shown

Find:

$$f(-4) = 0$$

$$f(-2) = 2$$

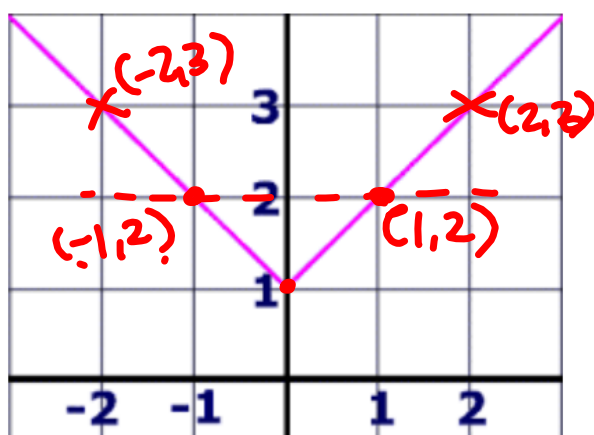
input  
output  
x/y

$$f(-1) = 0$$

$$f(0) = -2$$

$$f(1) = -2.5$$

$$f(2) = 0$$



The graph  $f(x)$  is shown

Find:

x when  $f(x) = 1$   $x = 0$

x when  $f(x) = 2$   $f(1) = 2$   
 $f(-1) = 2$

x when  $f(x) = 3$   
 $x = -2$  or  $x = 2$

Find an equation of a linear function given  
 $f(1) = 7$  and  $f(4) = 13$



hw

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

**Evaluating Functions**

1. Evaluate the following expressions given the functions below:

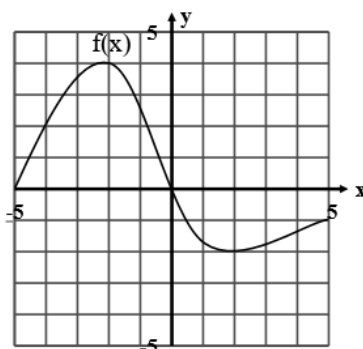
$$g(x) = -3x + 1 \quad f(x) = x^2 + 7 \quad h(x) = \frac{12}{x} \quad j(x) = 2x + 9$$

- a.  $g(10) =$
- b.  $f(3) =$
- c.  $h(-2) =$
- d.  $j(7) =$
- e.  $h(a)$
- f.  $g(b+c)$
- g.  $f(h(x))$
- h. Find  $x$  if  $g(x) = 16$
- i. Find  $x$  if  $h(x) = -2$
- j. Find  $x$  if  $f(x) = 23$

2. Translate the following statements into coordinate points:

- a.  $f(-1) = 1$
- b.  $h(2) = 7$
- c.  $g(1) = -1$
- 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  $h(4) = -3$ .