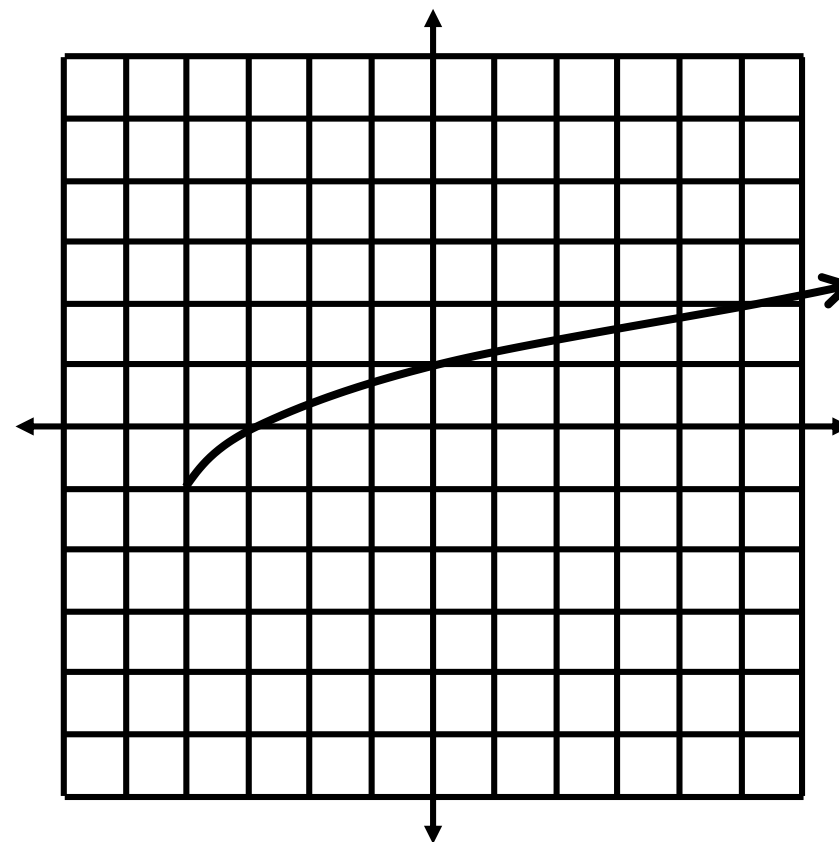
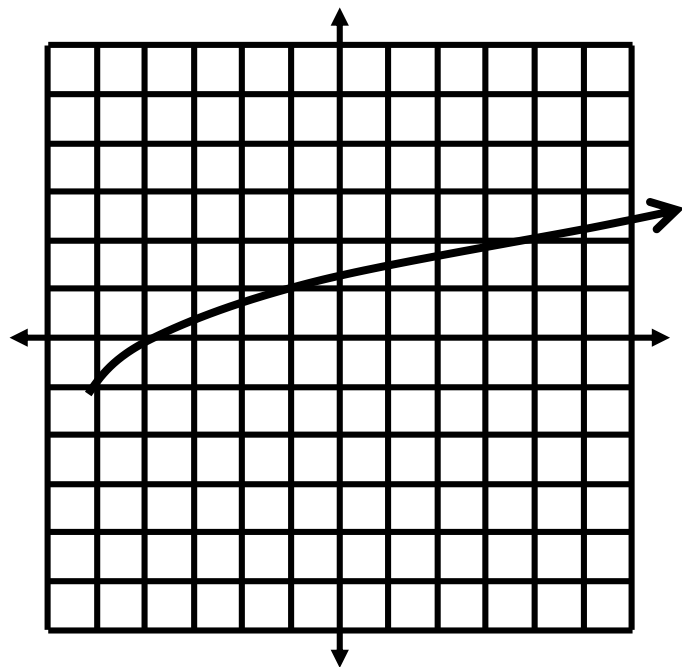


## Bell Work

1. What is another name for range numbers?
2. What is another name for domain numbers?
3. State the domain in interval notation of the number relationship to the right.
4. State the range in interval notation of the number relationship to the right.



This lesson, you will use function notation with graphs, describe the independent and dependent variables of a situation, find a reasonable domain and range of a situation, and find a functions of a situation.



$$f(x) = .1x + 200$$

$$D : \{x \mid 0 \leq x \leq 1,000\}$$

$$R : \{y \mid 0 \leq y \leq 2,000\}$$

Evaluate the function at each domain value.

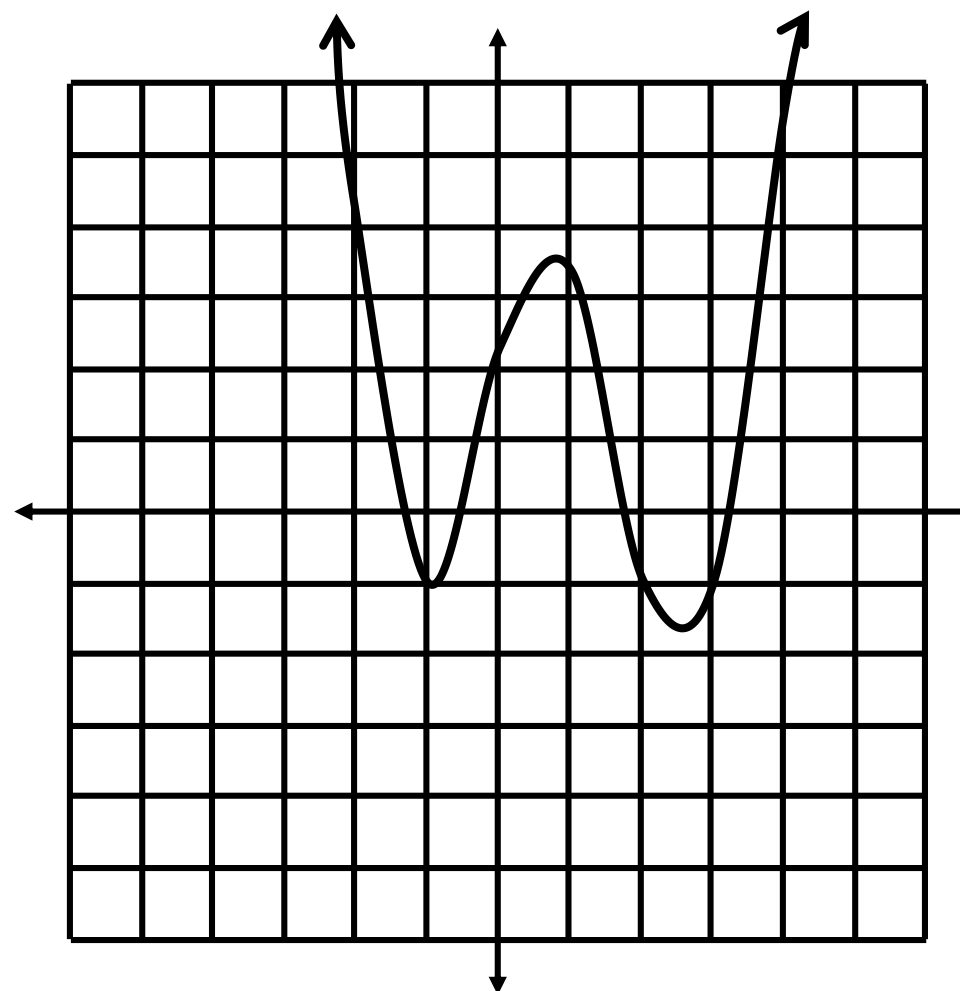
$$f(-2) = 4$$

*Use the graph and locate  $x = -2$ . The function has a value of 4.*

$$f(1) = 1$$

$$f(2.5) = -2.6$$

*For this one, you need to estimate the answer. So, -2.5 and -2.7 would also be good answers.*



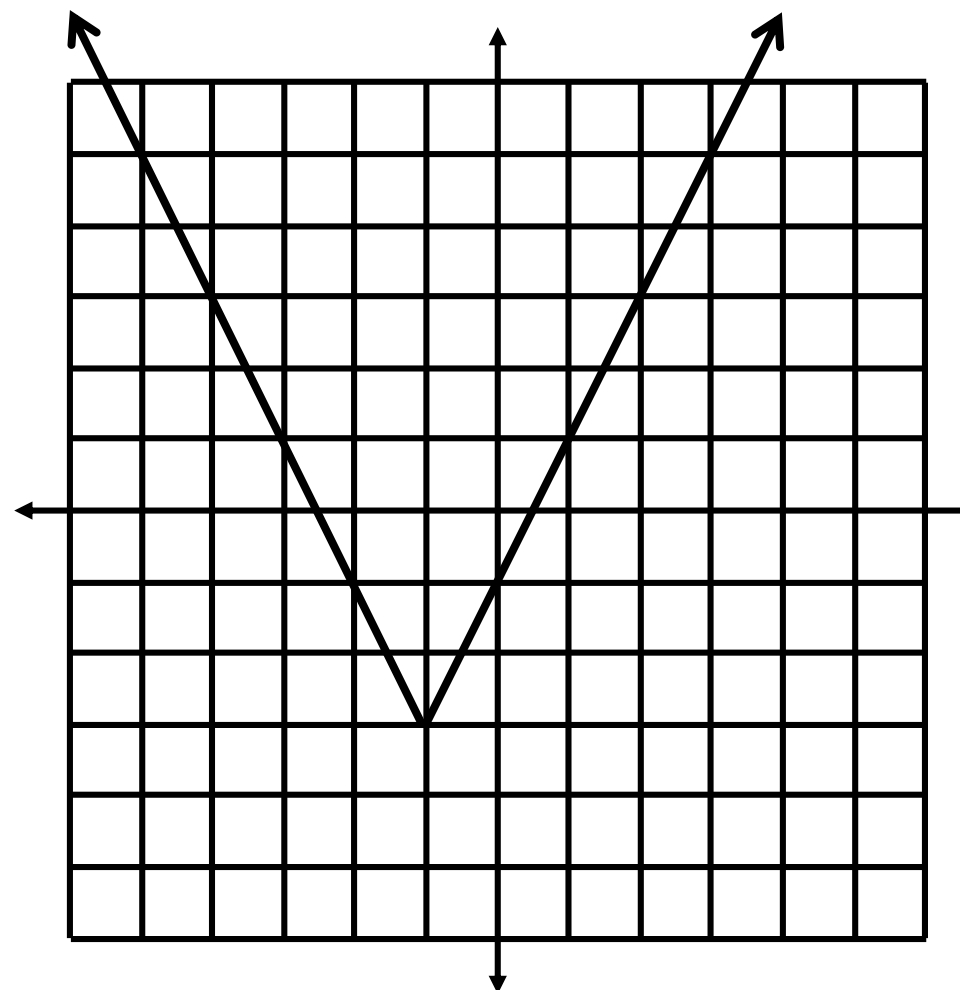
Evaluate the function at each domain value.

$$g(-4) = 3$$

*Use the graph and locate  $x = -4$ . The function has a value of 3.*

$$g(-1) = -3$$

$$g(3.5) = 6$$



Evaluate the function at each domain value.

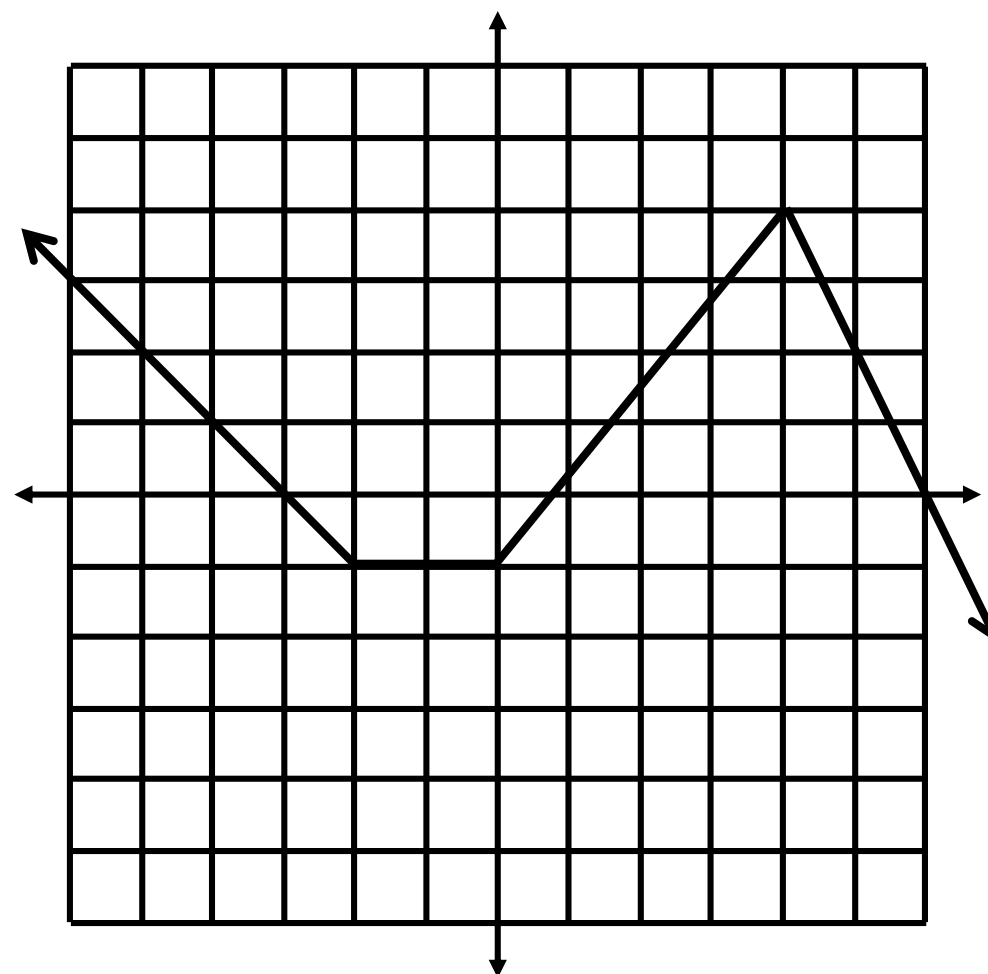
$$h(-5) = 2$$

*Use the graph and locate  $x = -5$ . The function has a value of 0.*

$$h(-1.5) = -1$$

$$h(3) = 2.7$$

*For this one, you need to estimate the answer. So, 2.6 and 2.8 would also be good answers.*



Identify the independent and dependent variable. Explain a reasonable domain and range. Then find the function that represents the situation.

Each American dollar is equal to 1.33 in Canadian money.

Ind. V: American money

Dep. V: Canadian money

$$D: \{x \mid 0 \leq x \leq 10,000\}$$

$$R: \{y \mid 0 \leq y \leq 13,300\}$$

$$f(x) = 1.33x$$

*Since 1 American dollar is equal to 1.33 Canadian dollars, we times the amount of American money,  $x$ , by 1.33 to get the amount of Canadian money.*

*10,000 would be good upper limit, since not too many people convert a lot of American money to Canadian money.*

Identify the independent and dependent variable. Explain a reasonable domain and range. Then find the function that represents the situation.

Jones' Hardware Store is having a 15% sale on all hand tools.

Ind. V.: regular price of the hand tools  $f(x) = x - .15x$

Dep. V.: the sale price of the hand tools  $f(x) = .85x$

$$D: \{x \mid 5 \leq x \leq 100\}$$

$$R: \{y \mid 4.25 \leq y \leq 85\}$$

*Since all hand tools are 15%, we subtract 15% of the price. Then we can simplify the equation.*

*Most hand tools range from \$5 to \$100.*

Identify the independent and dependent variable. Explain a reasonable domain and range. Then find the function that represents the situation.

Mike earns \$200 a week and 10% commission working at Jones' Hardware Store.

Ind. V.: the amount of sales in one week

Dep. V.: his wages

$$D: \{x \mid 0 \leq x \leq 10,000\}$$

$$R: \{y \mid 200 \leq y \leq 1,200\}$$

$$h(x) = 200 + .10x$$

$$h(x) = .1x + 200$$

*He probably sells \$500 to \$5,000 in a week.*

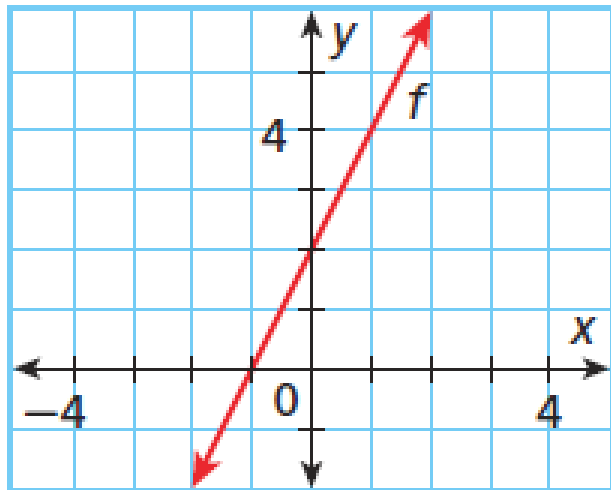


**Assignment:**

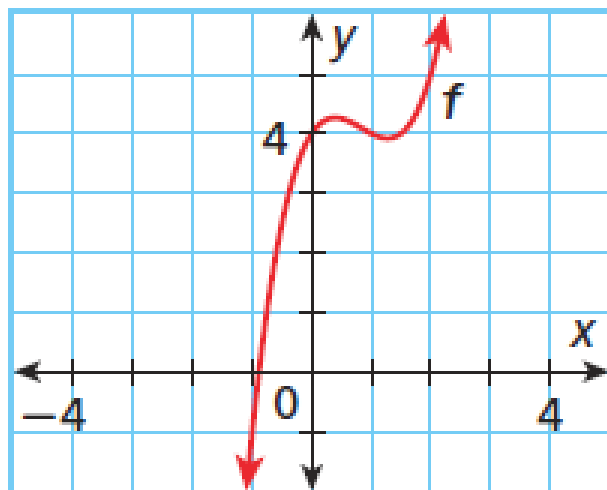
**Page 54 # 15 – 17, 29 – 32, 43 – 48**

For each function, evaluate  $f(0)$ ,  $f\left(\frac{3}{2}\right)$ , and  $f(-1)$ .

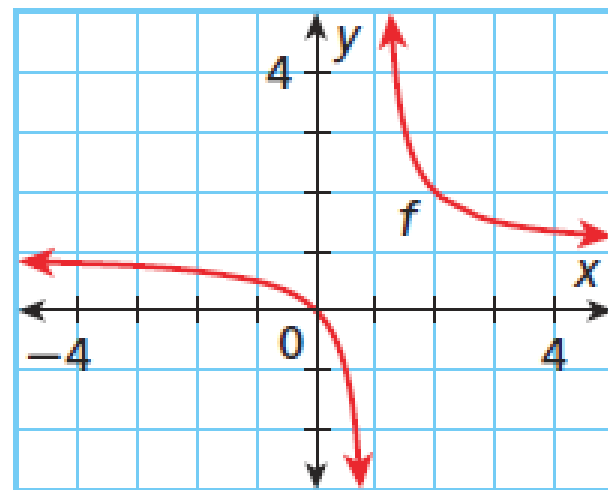
15.



16.



17.



**Explain what a reasonable domain and range would be for each situation.**

- 29.** the number of boxes of kitchen tile that must be purchased to cover a floor with an area of  $A$  square feet
- 30.** the number of horseshoes needed to shoe  $h$  horses
- 31.** the vertical position of a diver in relation to the surface of the pool  $t$  seconds after diving from a 10-meter platform into a 16-foot-deep pool (*Hint:* 1 meter  $\approx$  3.28 feet)
- 32.** the temperature in degrees Fahrenheit at an Antarctic research station  $h$  hours after 12:00 A.M.

**Identify the independent and dependent variable for each situation. Then state a reasonable domain.**

- 43.** As long as a minimum of 15 shirts are ordered, the cost for an order of T-shirts is \$4.25 per shirt.
- 44.** Belinda's medical insurance states that she must pay the first \$500 for a hospital stay plus 15% of the remaining charges.

**Write a function to represent each situation. Graph your function.**

- 45.** The price for a tank of gasoline is \$2.37 per gallon.
- 46.** Raul earns \$7.50 per hour for baby-sitting.
- 47.** The sale price is 20% off of the original price.
- 48.** Leona's weekly salary is \$250 plus 5% of her total sales for the week.