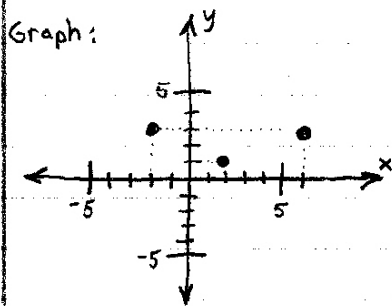


Chapter 2 section 1 Relations and Functions

Graph each relation or equation and find the domain and range. Then determine whether the relation or equation is a function. Is the relation discrete or continuous?

⑦  $\{(6,3), (2,1), (-2,3)\}$

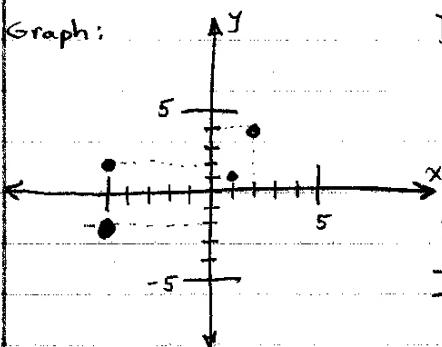


Domain:  $\{-2, 2, 6\}$

Range:  $\{1, 3\}$

It IS a Function,  
It is Discrete.

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



Domain:  $\{-5, 1, 2\}$

Range:  $\{-2, 1, 2, 4\}$

It is NOT a Function  
It is Discrete.

Students need to know:

Domain is set of all inputs

Range is set of all outputs

continuous

discrete

Function: every input has exactly one output

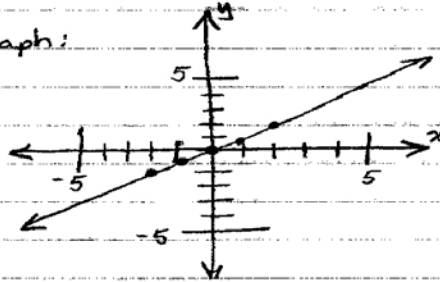
Assignment 2.1  
Relations and Functions

Chapter 2 section 1 cont...

9)  $y = 0.5x$

x	y
-2	-1 $\leftarrow 0.5(-2)$
-1	-0.5 $\leftarrow 0.5(-1)$
0	0 $\leftarrow 0.5(0)$
1	0.5 $\leftarrow 0.5(1)$
2	1 $\leftarrow 0.5(2)$

Graph:



Domain:  $\{x = \mathbb{R}\}$

Range:  $\{y = \mathbb{R}\}$

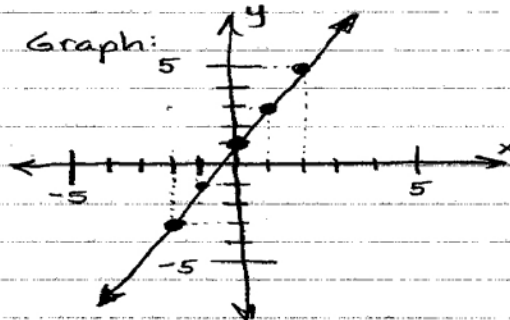
It IS a Function

It is Continuous

10)  $y = 2x + 1$

x	y
-2	-3 $\leftarrow 2(-2) + 1$
-1	-1 $\leftarrow 2(-1) + 1$
0	1 $\leftarrow 2(0) + 1$
1	3 $\leftarrow 2(1) + 1$
2	5 $\leftarrow 2(2) + 1$

Graph:



Domain:  $\{x = \mathbb{R}\}$

Range:  $\{y = \mathbb{R}\}$

It IS a Function

It is Continuous

Assignment 2.1  
Relations and Functions

Chapter 2.1 continued...

Find each value if  $f(x) = 5x - 9$

$$\begin{aligned} \textcircled{11} \quad f(6) &= 5(6) - 9 \\ &= 30 - 9 \\ &= 21 \end{aligned}$$

$$\boxed{f(6) = 21}$$

$$\begin{aligned} \textcircled{12} \quad f(-2) &= 5(-2) - 9 \\ &= -10 - 9 \\ &= -19 \end{aligned}$$

$$\boxed{f(-2) = -19}$$

$$\begin{aligned} \textcircled{13} \quad f(y) &= 5(y) - 9 \\ &= 5y - 9 \end{aligned}$$

$$\boxed{f(y) = 5y - 9}$$

$$\begin{aligned} \textcircled{14} \quad f(-2v) &= 5(-2v) - 9 \\ &= -10v - 9 \end{aligned}$$

$$\boxed{f(-2v) = -10v - 9}$$

function "Rule"

$$f(x) = 5x - 9$$

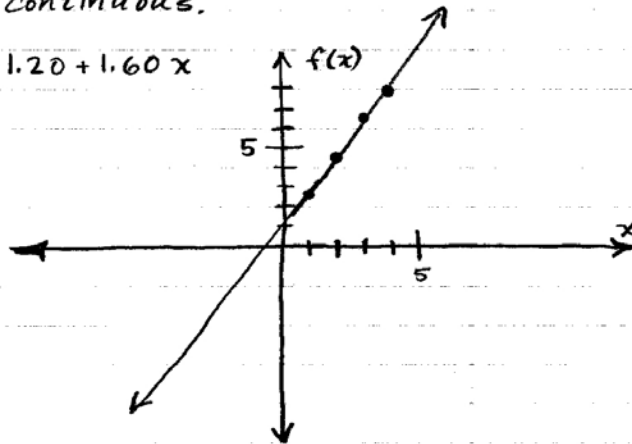
↑  
think of "x" as  
one example of  
an input

The function  
"rule" shows  
"what happens  
to an input when  
put into the function"

Chapter 2 section 1 continued...

⑮ A taxi company charges \$2.80 for the first mile and \$1.60 for each additional mile. The amount a passenger will be charged can be expressed as  $f(x) = 1.20 + 1.60x$ , when  $x \geq 1$ . Graph this equation and find the domain and range. Then determine whether the equation is a function. Is the equation discrete or continuous.

$x$	$f(x)$	$f(x) = 1.20 + 1.60x$
1	2.80	$\leftarrow 1.20 + 1.60(1)$
2	4.80	$\leftarrow 1.20 + 1.60(2)$
3	6.40	$\leftarrow 1.20 + 1.60(3)$
4	8.00	$\leftarrow 1.20 + 1.60(4)$



$$f(x) = 1.20 + 1.60x$$

Domain:  $x = \mathbb{R}$

Range:  $f(x) = \mathbb{R}$

The equation IS a Function

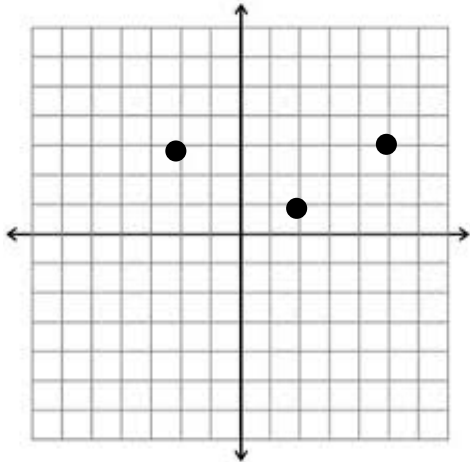
The equation is Continuous

Assignment 2.1  
Relations and Functions

Graph each relation or equation and find the domain and range. Then determine whether the relation or equation is a function. Is the relation *discrete* or *continuous*?

$\{(6, 3), (2, 1), (-2, 3)\}$

Graph:



Domain:  $\{-2, 2, 6\}$

Range:  $\{1, 3\}$

It \_\_\_\_\_ a function.

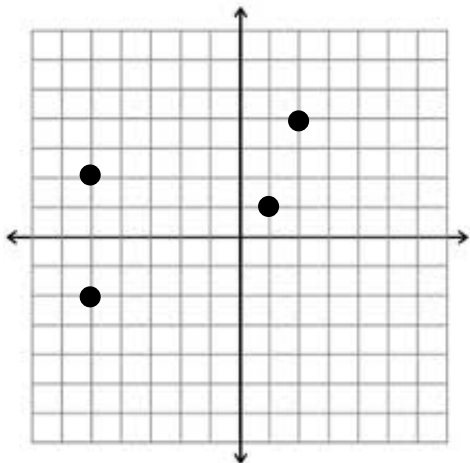
- A) is
- B) is not

It is \_\_\_\_\_.

- A) discrete
- B) continuous

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

Graph:



Domain:  $\{-5, 1, 2\}$

Range:  $\{-2, 1, 2, 4\}$

It \_\_\_\_\_ a function.

- A) is
- B) is not

It is \_\_\_\_\_.

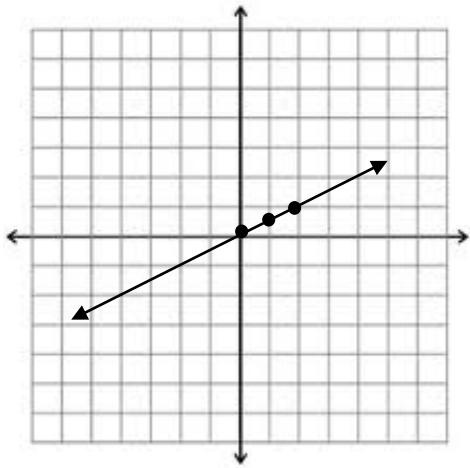
- A) discrete
- B) continuous

Assignment 2.1  
Relations and Functions

$$y = 0.5x$$

x	y	
-2	-1	$= 0.5 \bullet -2$
-1	-0.5	$= 0.5 \bullet -1$
0	0	$= 0.5 \bullet 0$
1	0.5	$= 0.5 \bullet 1$
2	1	$= 0.5 \bullet 2$

Graph:



Domain:  $\{x = \mathbb{R}\}$

Range:  $\{y = \mathbb{R}\}$

It \_\_\_\_\_ a function.

- A) is
- B) is not

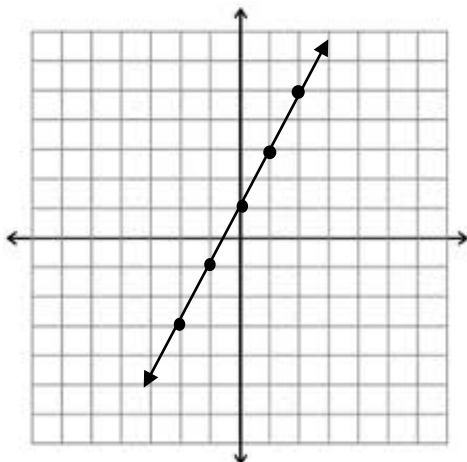
It is \_\_\_\_\_.

- A) continuous
- B) discrete

$$y = 2x + 1$$

x	y	
-2	-3	$= 2 \bullet -2 + 1$
-1	-1	$= 2 \bullet -1 + 1$
0	1	$= 2 \bullet 0 + 1$
1	3	$= 2 \bullet 1 + 1$
2	5	$= 2 \bullet 2 + 1$

Graph:



Domain:  $\{x = \mathbb{R}\}$

Range:  $\{y = \mathbb{R}\}$

It \_\_\_\_\_ a function.

- A) is
- B) is not

It is \_\_\_\_\_.

- A) discrete
- B) continuous

Choice Strategy

Assignment 2.1  
Relations and Functions

Find each value if  $f(x) = 5x - 9$ .

$f(6)$

$$\begin{aligned} &= 5(6) - 9 \\ &= 30 - 9 \\ &= \square \\ f(6) &= \square \end{aligned}$$

$5 \bullet 6 = 30$

$30 - 9 = \square$

$\square = 21$

YES

NO

$f(-2)$

$$\begin{aligned} &= 5(-2) - 9 \\ &= -10 - 9 \\ &= \square \\ f(-2) &= \square \end{aligned}$$

$5 \bullet -2 = 10$

$-10 - 9 = \square$

$\square = -19$

YES

NO

$f(y)$

$$\begin{aligned} &= 5(y) - 9 \\ &= \square - 9 \\ f(y) &= \square - 9 \end{aligned}$$

$5 \bullet y = \square$

$\square = 5r$

YES

NO

$f(-2v)$

$$\begin{aligned} &= 5(-2v) - 9 \\ &= \square - 9 \\ f(-2v) &= \square - 9 \end{aligned}$$

$5 \bullet -2v = \square$

$\square = -10v$

YES

NO

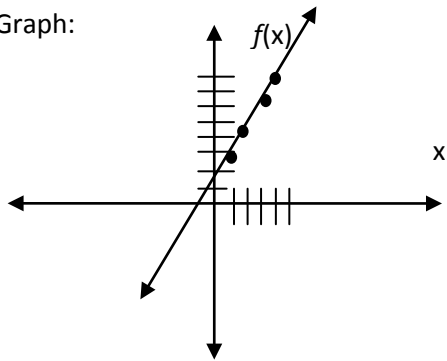
Assignment 2.1  
Relations and Functions

**TAXI RIDE**

A taxi company charges \$2.80 for the first mile and \$1.60 for each additional mile. The amount a passenger will be charged can be expressed as  $f(x) = 1.20 + 1.60x$ , when  $x \geq 1$ . Graph this equation and find the domain and range. Then determine whether the equation is a function. Is the equation *discrete* or *continuous*?

x	f(x)
1	2.80 ← = 1.60 • 1 + 1.20
2	4.80 ← = 1.60 • 2 + 1.20
3	6.40 ← = 1.60 • 3 + 1.20
4	8.00 ← = 1.60 • 4 + 1.20

Graph:



Domain:  $x = \mathbb{R}$

Range:  $f(x) = \mathbb{R}$

It \_\_\_\_ a function.

- A) is
- B) is not

It is \_\_\_\_\_.

- A) discrete
- B) continuous

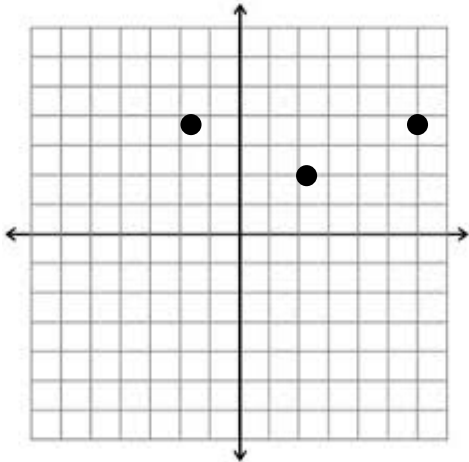


Assignment 2.1  
Relations and Functions

Graph each relation or equation and find the domain and range. Then determine whether the relation or equation is a function. Is the relation *discrete* or *continuous*?

$\{(6, 3), (2, 1), (-2, 3)\}$

Graph:



Domain: { , , }

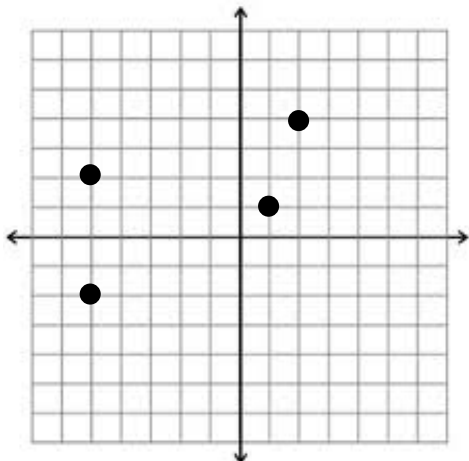
Range: { , }

It \_\_\_\_\_ (is *or* is not) a function.

It is \_\_\_\_\_ (discrete *or* continuous).

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

Graph:



Domain: { , , }

Range: { , , , }

It \_\_\_\_\_ (is *or* is not) a function.

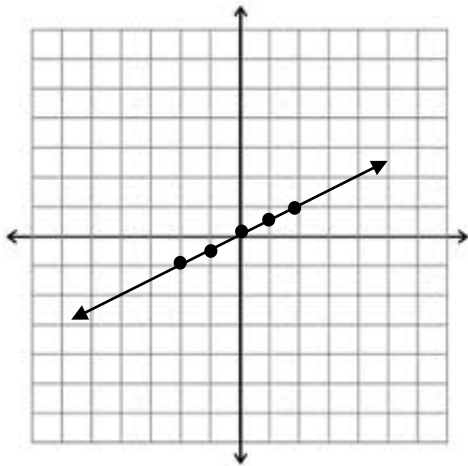
It is \_\_\_\_\_ (discrete *or* continuous).

Assignment 2.1  
Relations and Functions

$y = 0.5x$

x	y	
-2		$= 0.5 \bullet -2$
-1		$= 0.5 \bullet -1$
0		$= 0.5 \bullet 0$
1		$= 0.5 \bullet 1$
2		$= 0.5 \bullet 2$

Graph:



Domain:  $\{ x = \mathbb{R} \}$

Range:  $\{ y = \mathbb{R} \}$

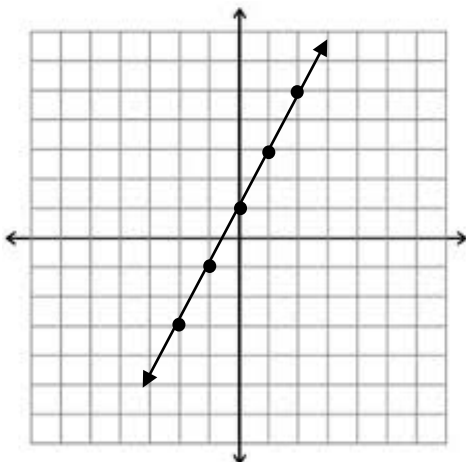
It \_\_\_\_\_ (is **or** is not) a function.

It is \_\_\_\_\_ (discrete **or** continuous).

$y = 2x + 1$

x	y	
-2		$= 2 \bullet -2 + 1$
-1		$= 2 \bullet -1 + 1$
0		$= 2 \bullet 0 + 1$
1		$= 2 \bullet 1 + 1$
2		$= 2 \bullet 2 + 1$

Graph:



Domain:  $\{ x = \mathbb{R} \}$

Range:  $\{ y = \mathbb{R} \}$

It \_\_\_\_\_ (is **or** is not) a function.

It is \_\_\_\_\_ (discrete **or** continuous).

Closed Strategy

Assignment 2.1  
Relations and Functions

Find each value if  $f(x) = 5x - 9$ .

$$\begin{aligned} f(6) &= 5(6) - 9 \\ &= \square - 9 \\ &= \square \\ f(6) &= \square \end{aligned}$$

$5 \bullet 6 = \square$   
 $\square - 9 = \square$

---

$$\begin{aligned} f(-2) &= 5(-2) - 9 \\ &= \square - 9 \\ &= \square \\ f(-2) &= \square \end{aligned}$$

$5 \bullet -2 = \square$   
 $\square - 9 = \square$

---

$$\begin{aligned} f(y) &= 5(y) - 9 \\ &= \square - 9 \\ f(y) &= \square - 9 \end{aligned}$$

$5 \bullet y = \square$

---

$$\begin{aligned} f(-2v) &= 5(-2v) - 9 \\ &= \square - 9 \\ f(-2v) &= \square - 9 \end{aligned}$$

$5 \bullet -2v = \square$

---

Assignment 2.1  
Relations and Functions

**TAXI RIDE**

A taxi company charges \$2.80 for the first mile and \$1.60 for each additional mile. The amount a passenger will be charged can be expressed as  $f(x) = 1.20 + 1.60x$ , when  $x \geq 1$ . Graph this equation and find the domain and range. Then determine whether the equation is a function. Is the equation *discrete* or *continuous*?

x	f(x)
1	4.40
2	6.00
3	7.60
4	9.20

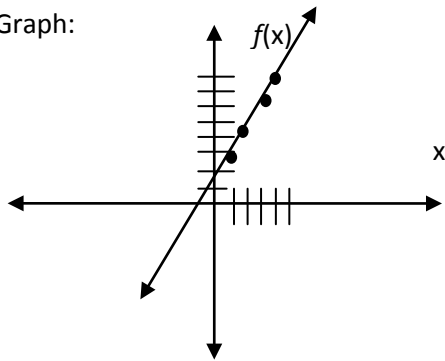
← = 1.60 • 1 + 1.20

← = 1.60 • 2 + 1.20

← = 1.60 • 3 + 1.20

← = 1.60 • 4 + 1.20

Graph:



Domain:  $x = \mathbb{R}$

Range:  $f(x) = \mathbb{R}$

It \_\_\_\_\_ (is **or** is not) a function.

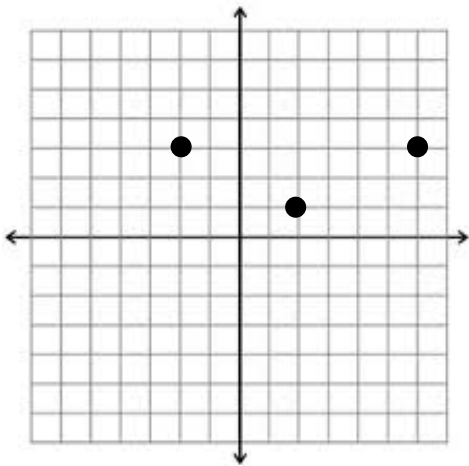
It is \_\_\_\_\_ (discrete **or** continuous).

Assignment 2.1  
Relations and Functions

Graph each relation or equation and find the domain and range. Then determine whether the relation or equation is a function. Is the relation *discrete* or *continuous*?

Graph:

$$\{(6, 3), (2, 1), (-2, 3)\}$$



Domain: { \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ }

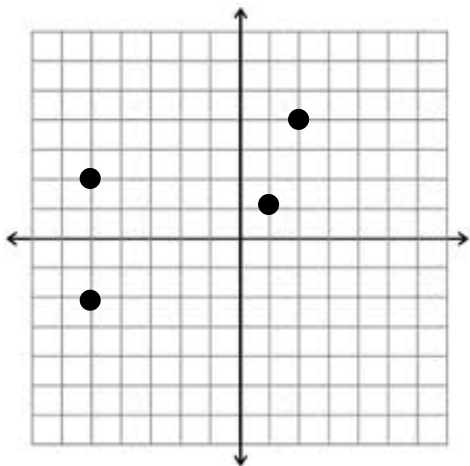
Range: { \_\_\_\_\_ , \_\_\_\_\_ }

It \_\_\_\_\_ (is *or* is not) a function.

It is \_\_\_\_\_ (discrete *or* continuous).

Graph:

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



Domain: { \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ }

Range: { \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_ }

It \_\_\_\_\_ (is *or* is not) a function.

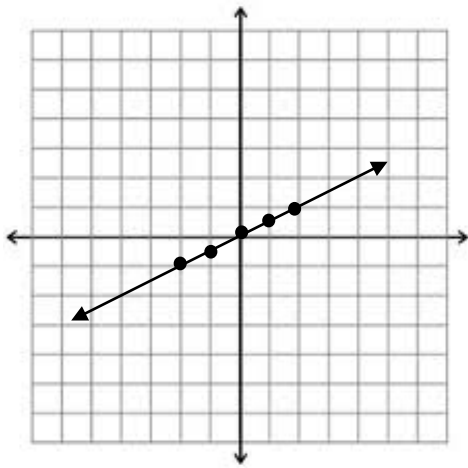
It is \_\_\_\_\_ (discrete *or* continuous).

Assignment 2.1  
Relations and Functions

$y = 0.5x$

x	y		
-2		←←←←←	$-1 = 0.5 \bullet -2$
-1		←←←←←	$-0.5 = 0.5 \bullet -1$
0		←←←←←	$0 = 0.5 \bullet 0$
1		←←←←←	$0.5 = 0.5 \bullet 1$
2		←←←←←	$1 = 0.5 \bullet 2$

Graph:



Domain:  $\{x = \mathbb{R}\}$

Range:  $\{y = \mathbb{R}\}$

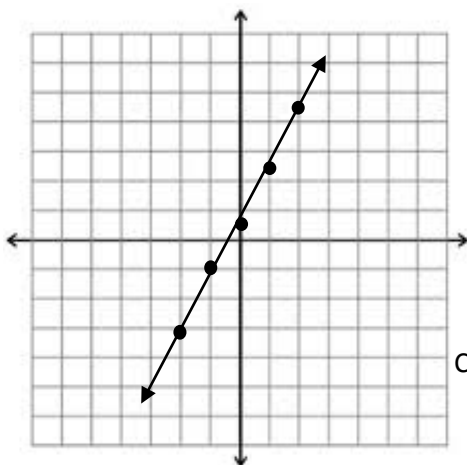
It \_\_\_\_\_ (is **or** is not) a function.

It is \_\_\_\_\_ (discrete **or** continuous).

$y = 2x + 1$

x	y		
-2		←←←←←	$-3 = 2 \bullet -2 + 1$
-1		←←←←←	$-1 = 2 \bullet -1 + 1$
0		←←←←←	$1 = 2 \bullet 0 + 1$
1		←←←←←	$3 = 2 \bullet 1 + 1$
2		←←←←←	$5 = 2 \bullet 2 + 1$

Graph:



Domain:  $\{x = \mathbb{R}\}$

Range:  $\{y = \mathbb{R}\}$

It \_\_\_\_\_ (is **or** is not) a function.

It is \_\_\_\_\_ (discrete **or** continuous).

Closed Last Step Strategy

Assignment 2.1  
Relations and Functions

Find each value if  $f(x) = 5x - 9$ .

$$f(6)$$

$$= 5(6) - 9$$

$$= 30 - 9$$

$$= \square$$

$$f(6) = \square$$

$$5 \bullet 6 = 30$$

$$30 - 9 = \square$$

$$f(-2)$$

$$= 5(-2) - 9$$

$$= 10 - 9$$

$$= \square$$

$$f(-2) = \square$$

$$5 \bullet -2 = -10$$

$$-10 - 9 = \square$$

$$f(y)$$

$$= 5(y) - 9$$

$$= \square - 9$$

$$f(y) = \square - 9$$

$$5 \bullet y = \square$$

$$f(-2v)$$

$$= 5(-2v) - 9$$

$$= \square - 9$$

$$f(-2v) = \square - 9$$

$$5 \bullet -2v = \square$$

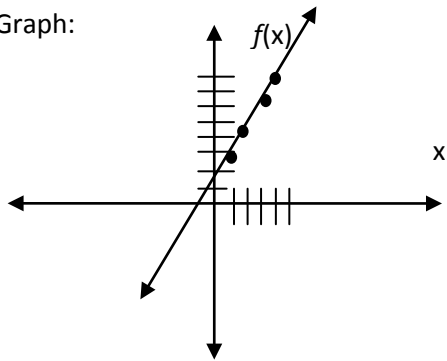
Assignment 2.1  
Relations and Functions

**TAXI RIDE**

A taxi company charges \$2.80 for the first mile and \$1.60 for each additional mile. The amount a passenger will be charged can be expressed as  $f(x) = 1.20 + 1.60x$ , when  $x \geq 1$ . Graph this equation and find the domain and range. Then determine whether the equation is a function. Is the equation *discrete* or *continuous*?

x	f(x)
1	2.80 = 1.60 • 1 + 1.20
2	4.80 = 1.60 • 2 + 1.20
3	6.40 = 1.60 • 3 + 1.20
4	8.00 = 1.60 • 4 + 1.20

Graph:



Domain:  $x = \mathbb{R}$

Range:  $f(x) = \mathbb{R}$

It \_\_\_\_\_ (is **or** is not) a function.

It is \_\_\_\_\_ (discrete **or** continuous).



Assignment 2.1  
Relations and Functions

Graph each relation or equation and find the domain and range. Then determine whether the relation or equation is a function. Is the relation *discrete* or *continuous*?

$$\{(6, 3), (2, 1), (-2, 3)\}$$

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

$$y = 0.5x$$

$$y = 2x + 1$$

Find each value if  $f(x) = 5x - 9$ .

$$f(6)$$

$$f(-2)$$

$$f(y)$$

$$f(-2v)$$

TAXI RIDE

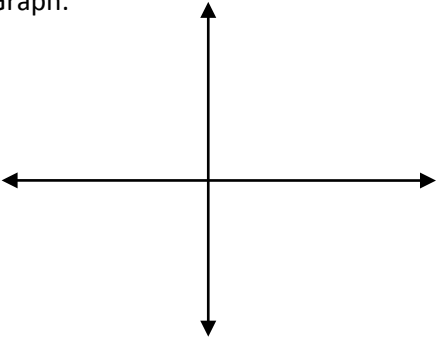
A taxi company charges \$2.80 for the first mile and \$1.60 for each additional mile. The amount a passenger will be charged can be expressed as  $f(x) = 1.20 + 1.60x$ , when  $x \geq 1$ . Graph this equation and find the domain and range. Then determine whether the equation is a function. Is the equation *discrete* or *continuous*?

Assignment 2.1  
Relations and Functions

Graph each relation or equation and find the domain and range. Then determine whether the relation or equation is a function. Is the relation *discrete* or *continuous*?

$\{(6, 3), (2, 1), (-2, 3)\}$

Graph:



Domain: {            }

Range: {            }

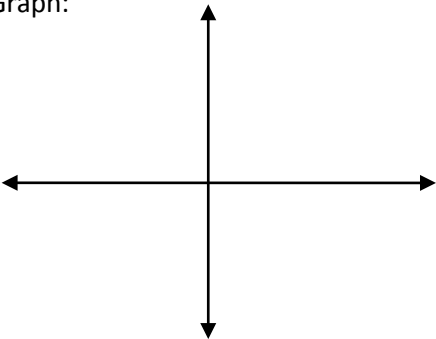
It \_\_\_\_\_ (is **or** is not) a function.

It is \_\_\_\_\_ (discrete **or** continuous).

---

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

Graph:



Domain: {            }

Range: {            }

It \_\_\_\_\_ (is **or** is not) a function.

It is \_\_\_\_\_ (discrete **or** continuous).

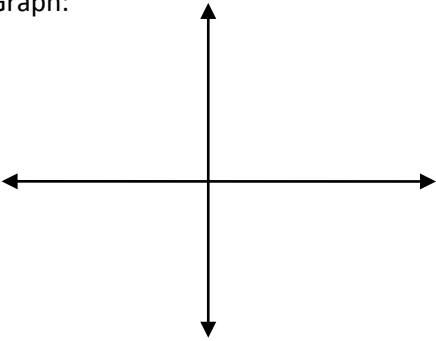
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Assignment 2.1  
Relations and Functions

$$y = 0.5x$$

x	y
-2	
-1	
0	
1	
2	

Graph:



Domain: {            }

Range: {            }

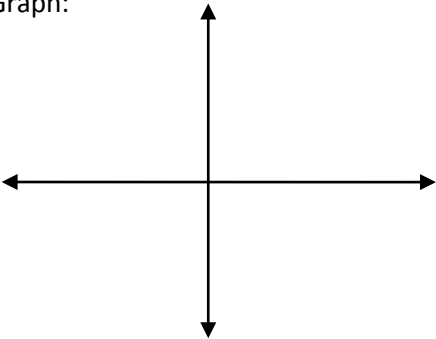
It \_\_\_\_\_ (is **or** is not) a function.

It is \_\_\_\_\_ (discrete **or** continuous).

$$y = 2x + 1$$

x	y
-2	
-1	
0	
1	
2	

Graph:



Domain: {            }

Range: {            }

It \_\_\_\_\_ (is **or** is not) a function.

It is \_\_\_\_\_ (discrete **or** continuous).

Assignment 2.1  
Relations and Functions

Find each value if  $f(x) = 5x - 9$ .

$$f(6)$$

$$\begin{aligned} &= 5( \quad ) - 9 \\ &= \\ &= \\ f(6) &= \end{aligned}$$

---

$$f(-2)$$

$$\begin{aligned} &= 5( \quad ) - 9 \\ &= \\ &= \\ f(-2) &= \end{aligned}$$

---

$$f(y)$$

$$\begin{aligned} &= 5( \quad ) - 9 \\ &= \\ f(y) &= \end{aligned}$$

---

$$f(-2v)$$

$$\begin{aligned} &= 5( \quad ) - 9 \\ &= \\ f(-2v) &= \end{aligned}$$

---

TAXI RIDE

A taxi company charges \$2.80 for the first mile and \$1.60 for each additional mile. The amount a passenger will be charged can be expressed as  $f(x) = 1.20 + 1.60x$ , when  $x \geq 1$ . Graph this equation and find the domain and range. Then determine whether the equation is a function. Is the equation *discrete* or *continuous*?