

# Domain, Range and Linear Functions

Relation - a set of ordered pairs

$$\{(3, -6), (5, -1), (0, 3), (-2, 3)\}$$

Function - a relation where all of the  $x$ -values are different

$$\{(3, -6), (5, -1), (0, 3), (-2, 3)\}$$

IS a function

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

IS not a function

Domain - the  $x$  values

Range - the  $y$  values

$$\{(3, -6), (5, -1), (0, 3), (-2, 3)\}$$

$$D: \{3, 5, 0, -2\}$$

$$R: \{-6, -1, 3\}$$

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

$$D: \{2, -3, 4\}$$

$$R: \{4, 1, 0, -3\}$$

1. Identify the domain and range of each relation. Determine if each relation represents a function.

a)  $\{(-1, 2), (0, 3), (2, 6), (5, 6)\}$

$$D: \{-1, 0, 2, 5\}$$

$$R: \{2, 3, 6\}$$

IS a function

b)  $\rightarrow$

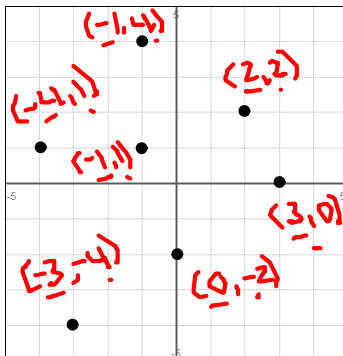
$x$	1	3	3	7
$y$	-2	-7	0	-2

$$D: \{1, 3, 7\}$$

$$R: \{-2, -7, 0\}$$

not a function

c)



$$D: \{-4, -3, -1, 0, 2, 3\}$$

$$R: \{-4, 1, 4, -2, 0, 2\}$$

not a function

2. Complete each ordered pair so that it is a solution to  $\underline{3x} - \underline{2y} = 10$ .

a) (2,?)

$$\begin{aligned} 3x - 2y &= 10 \\ 3(2) - 2y &= 10 \\ 6 - 2y &= 10 \\ \cancel{+6} \quad \quad -6 & \\ \hline -2y &= 4 \\ \frac{-2y}{-2} &= \frac{4}{-2} \end{aligned}$$

$$y = -2$$

$$\boxed{(2, -2)}$$

b) (?,4)

$$3x - 2y = 10$$

$$\begin{aligned} 3x - 2(4) &= 10 \\ 3x - 8 &= 10 \\ \cancel{+8} \quad \quad +8 & \\ \hline 3x &= 18 \\ \frac{3x}{3} &= \frac{18}{3} \end{aligned}$$

$$x = 6$$

$$\boxed{(6, 4)}$$