

Domain & Range Notes

Definition: Domain - the set of all x-values or input values of a relation. Can also be called the independent variable.

Definition: Range - the set of all y-values or output values of a relation. Can also be called the dependent variable.

Examples: Complete the table of values. Identify the domain and range of each set.

1.

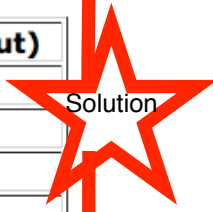
$y = 2x - 5$

x (input)	y (output)
-1	<input type="text"/>
0	<input type="text"/>
1	<input type="text"/>
2	<input type="text"/>



$y = 2x - 5$

x (input)	y (output)
-1	-7
0	-5
1	-3
2	-1



Substitute -1 in for x.

Substitute 0 in for x.

Substitute 1 in for x.

Substitute 2 in for x.

$$y = 2(-1) - 5$$

$$y = -2 - 5$$

$$y = -7$$

$$y = 2(0) - 5$$

$$y = 0 - 5$$

$$y = -5$$

$$y = 2(1) - 5$$

$$y = 2 - 5$$

$$y = -3$$

$$y = 2(2) - 5$$

$$y = 4 - 5$$

$$y = -1$$

Solution

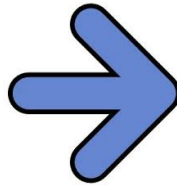
Domain: $\{-1, 0, 1, 2\}$

Range: $\{-7, -5, -3, -1\}$

2.

$y = -3x + 4$

x	-2	-1	0	1	2
y	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>



$y = -3x + 4$

x	-2	-1	0	1	2
y	10	7	4	1	-2

Solution

Substitute -2 in for x.

Substitute -1 in for x.

Substitute 0 in for x.

Substitute 1 in for x.

$$y = -3(-2) + 4$$

$$y = 6 + 4$$

$$y = 10$$

$$y = -3(-1) + 4$$

$$y = 3 + 4$$

$$y = 7$$

$$y = -3(0) + 4$$

$$y = 0 + 4$$

$$y = 4$$

$$y = -3(1) + 4$$

$$y = -3 + 4$$

$$y = 1$$

Substitute 2 in for x.

Solution

$$y = -3(2) + 4$$

$$y = -6 + 4$$

$$y = -2$$

Domain: $\{-2, -1, 0, 1, 2\}$

Range: $\{-2, 1, 4, 7, 10\}$