

UNIT 3. DAY 9: DOMAIN AND RANGE

Recall:

INPUT → x - values

OUTPUT → y or f(x)-values

For the following, make a list of the input and the output:

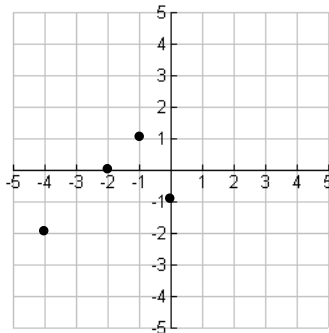
1) $f(4) = 8$

$f(7) = 11$

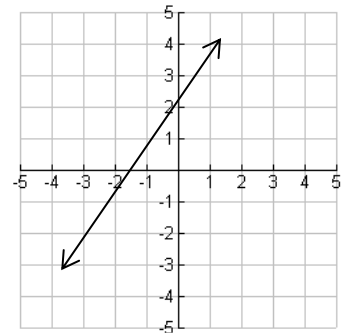
$f(-1) = 3$

$f(0) = 4$

2)



3)



Inputs: 4, 7, -1, 0

Outputs: 8, 11, 3, 4

Inputs: -4, -2, -1, 0

Outputs: -2, 0, 1, -1

Inputs: \mathbb{R}

Outputs: \mathbb{R}

INPUT values are called the domain **OUTPUT** values are also called the range.

List the DOMAIN and RANGE for problems 1-3:

4) Domain(x): 4, 7, -1, 0

Range(y): 8, 11, 3, 4

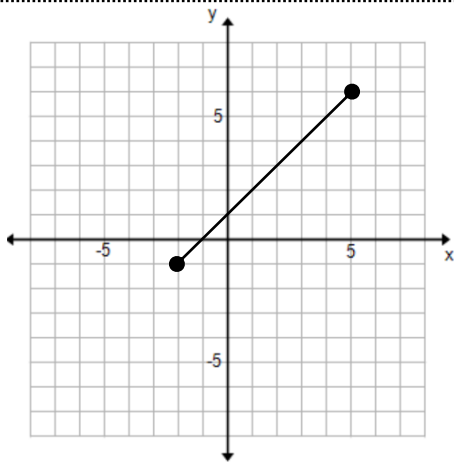
5) Domain(x): -4, -2, -1, 0

Range(y): -2, 0, 1, -1

6) Domain(x): $-\infty, \infty$ \mathbb{R}

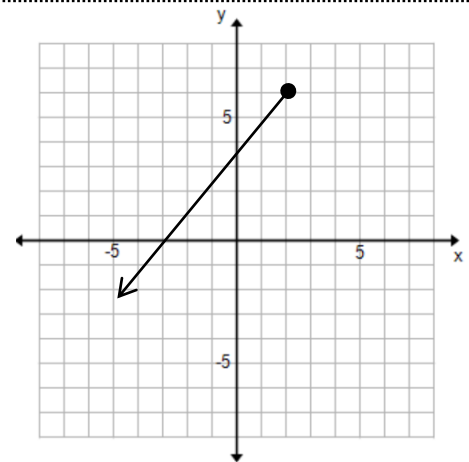
Range(y): $-\infty, \infty$ \mathbb{R}

We can express the domain and range using inequalities OR interval notation



*domain:
Left → Right

*Range:
Down → Up



Inequality:

Interval:

Domain(x):	$-2 \leq x \leq 5$	$[-2, 5]$
Range(y):	$-1 \leq y \leq 6$	$[-1, 6]$

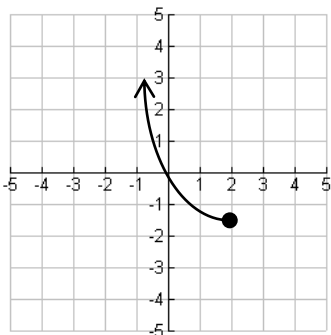
Inequality:

Interval:

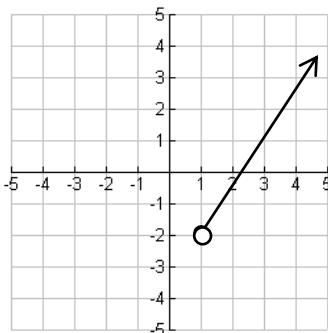
Domain(x):	$x \leq 2$	$(-\infty, 2]$
Range(y):	$y \leq 6$	$(-\infty, 6]$

List the DOMAIN (Inputs) and the RANGE (outputs) for the following graphs using inequality and interval notation:

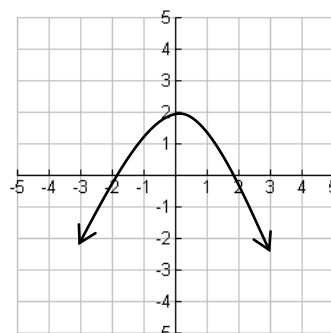
1.



2.



3.



Inequality:

Interval:

Domain: $x \leq 2$

$(-\infty, 2]$

Range: $y \geq -2$

$[-2, \infty)$

Ineq:

Int:

Domain: $x > 1$

$(1, \infty)$

Range: $y > -2$

$(-2, \infty)$

Ineq:

Int:

Domain: \mathbb{R}

$(-\infty, \infty)$

Range: $y \leq 2$

$(-\infty, 2]$



Magnet Time!