

AM Objective #4: AM: Domain and range, relations and functions

1. Find the domain of the relation  $\{(-4, 3), (-6, -5), (4, 1)\}$ .

- [A]  $\{-4, -6, 4\}$     [B]  $\{3, -5, 4\}$     [C]  $\{3, -5, 1\}$     [D]  $\{-4, -6, 1\}$

Domain =  $x$  = input

Range =  $y$  = output

Find the domain and range:

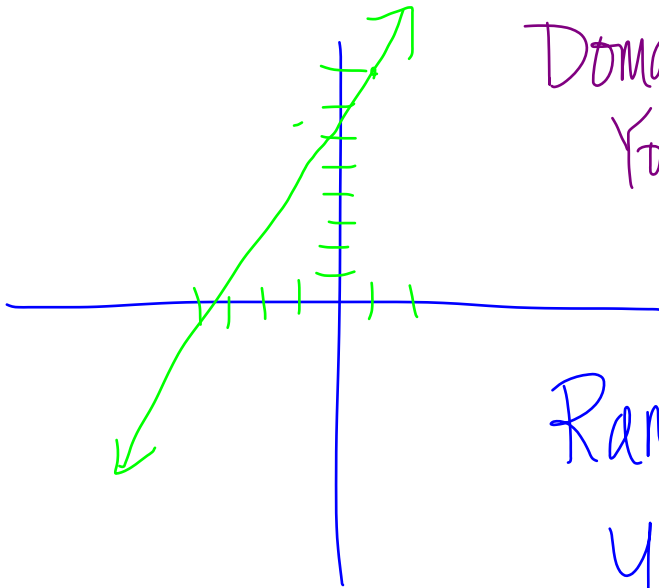
2.  $\{(x, y) | y = 7 + x\}$

[A]  $D = \{\text{all real numbers}\}; R = \{\text{all real numbers}\}$

[B]  $D = \{-7 \leq x \leq 7\}; R = \{\text{all real numbers}\}$

[C]  $D = \{\text{all real numbers}\}; R = \{x | x \geq -7\}$

[D]  $D = \{x | x \geq -7\}; R = \{\text{all real numbers}\}$



Domain =  $x$  values = input

You can plug in any  $x$  value

$$\Rightarrow x \in \mathbb{R} \quad (-\infty, \infty)$$

all real #s

Range =  $y$  values  $\updownarrow$

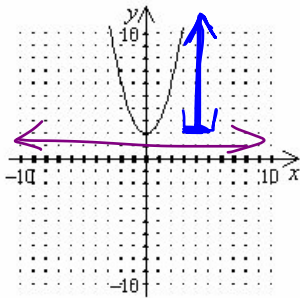
You can get any  $y$  value

$$\Rightarrow y \in \mathbb{R} \quad (-\infty, \infty)$$

all real #s

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3.



Domain = X values  $\leftrightarrow$   
You can plug in any #.

Range = y values  $\uparrow$   
from 2 and up  $y \geq 2$

[A]  $D = \{y \mid y \leq 2\}$

$R = \{y \mid y \text{ is a real number}\}$

[B]  $D = \{x \mid x \text{ is a real number}\}$

$R = \{y \mid y \text{ is a real number}\}$

[C]  $D = \{x \mid x \text{ is a real number}\}$

$R = \{y \mid y \geq 2\}$

[D]  $D = \{x \mid x > 2\}$

$R = \{y \mid y > 2\}$

4. Find the domain of the relation  $\{(1, 3), (-4, -2), (0, -5)\}$ .

Domain = x values =  $\{1, -4, 0\}$

Range = y values =  $\{3, -2, -5\}$