

10-2-17 1st Try

Long ago,

What is $4x+2$ when
 $x = -1$?

$$4(-1)+2 = -2$$

Function notation

$$f(x) = 4x+2$$

$$f(-1) = 4(-1)+2 = -2$$

$$f(x) = x^2 - 2 \quad g(x) = 2 - 3x$$

$$\textcircled{1} f(-3) = \underbrace{(-3)^2}_{9} - 2 = 7$$

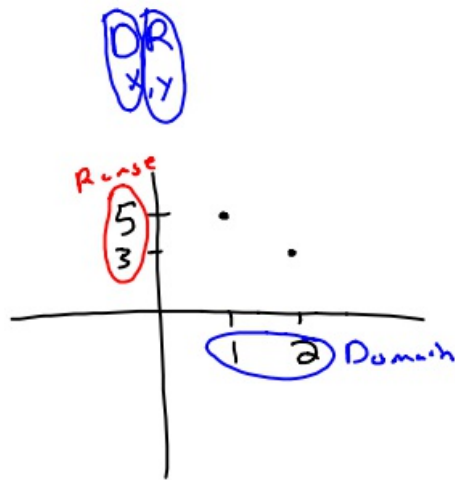
$$\textcircled{2} g(-5) = 2 - 3(-5) = 2 + 15 = 17$$

$$h(x) = 2^x \quad t(x) = \frac{x}{-2}$$

$$\textcircled{3} \quad h(-1) = 2^{-1} = \frac{1}{2}$$

$$\textcircled{4} \quad t(-8) = \frac{-8}{-2} = 4$$

Domain vs. Range



$$\textcircled{5} \quad \{(1, 3)(2, 7)(4, 3)\}$$

$$\text{Domain: } \{1, 2, 4\}$$

$$\text{Range: } \{3, 7\}$$

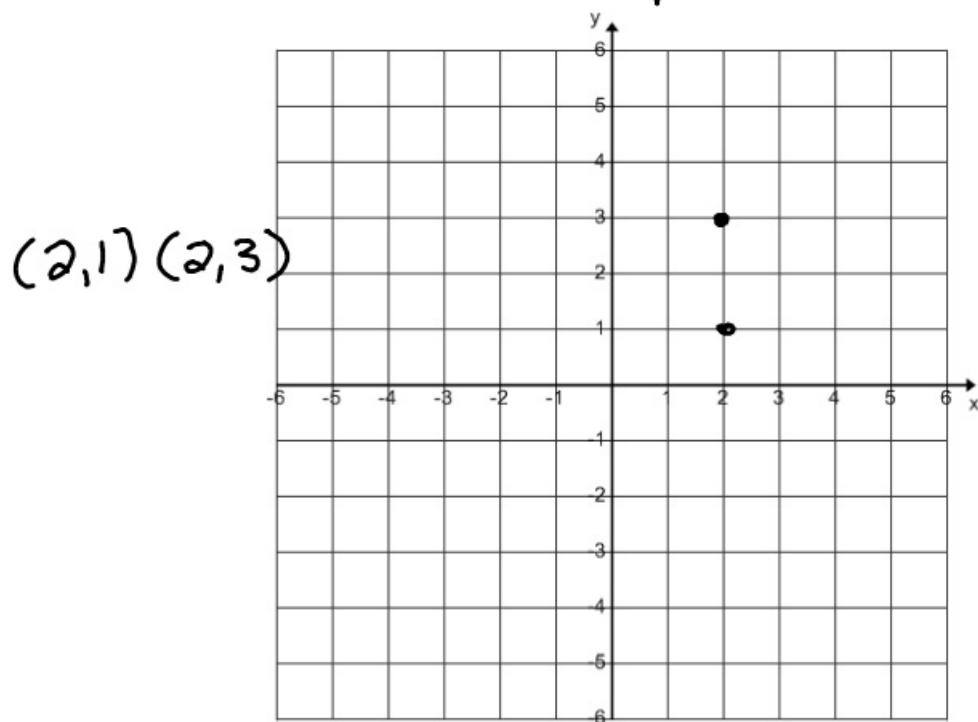
$$\text{Simplify } \frac{\cancel{(n+3)}(n-1)}{\cancel{(n+3)}}$$

$$n-1 \quad [n \neq -3]$$

Domain: All real #s but
 $n \neq -3$

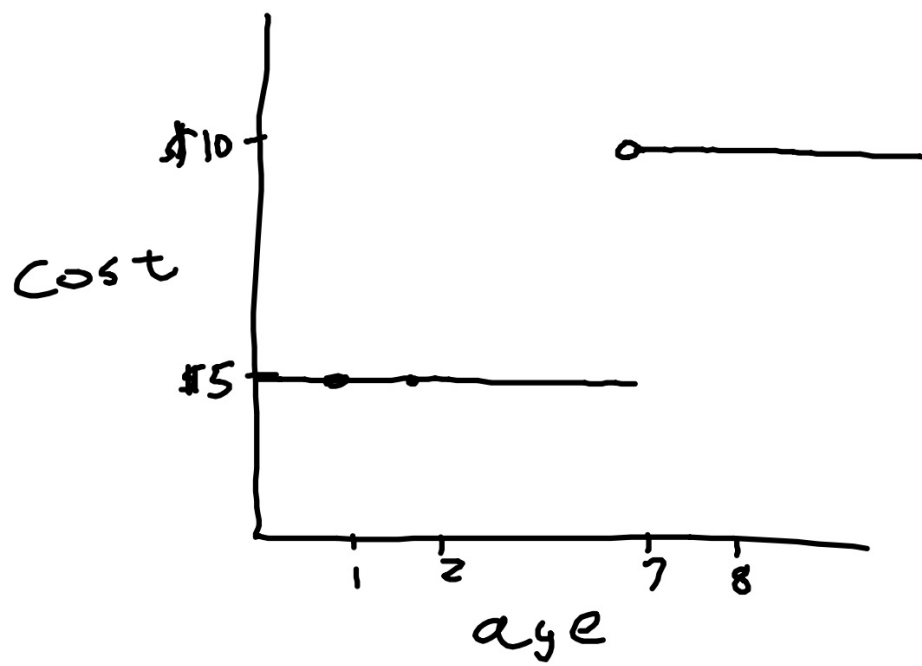
\mathbb{R}

Function: For every x ,
there can only be
one y value



$$\{(2,7)(3,8)(4,9)(3,11)\}$$

Not a function



If I ^{were} was Pres Trump,
I would

10-2-17 3rd Trig

We used to say what is

$3x - 4$ when $x = 5$?

$$3 \cdot 5 - 4 = 11$$

Now

$$f(x) = 3x - 4$$

$$f(5) = 3 \cdot 5 - 4 = 11$$

$$f(x) = x^2 - 4 \quad g(x) = \frac{x-2}{2}$$

$$\textcircled{1} f(-3) = (-3)^2 - 4$$
$$9 - 4 = 5$$

$$\textcircled{2} g(-8) = \frac{-8-2}{2} = \frac{-10}{2} = -5$$

$$t(x) = \frac{-x+8}{2}$$

$$\textcircled{3} t(-4) = \frac{-(-4)+8}{2} = \frac{4+8}{2} = \frac{12}{2} = 6$$

Domain vs. Range

X Y

Ex: $\frac{(\cancel{x+3})(x-1)}{\cancel{x+3}}$

$x-1$ [$x \neq -3$]

Domain: x can be anything
as long as it
isn't -3 .

\mathbb{R} except $x \neq -3$.

④ $\{(2,6)(3,7)(4,6)\}$

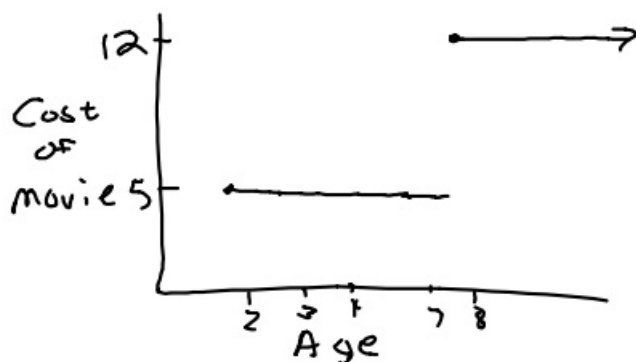
Domain: $\{2,3,4\}$

Range: $\{6,7\}$

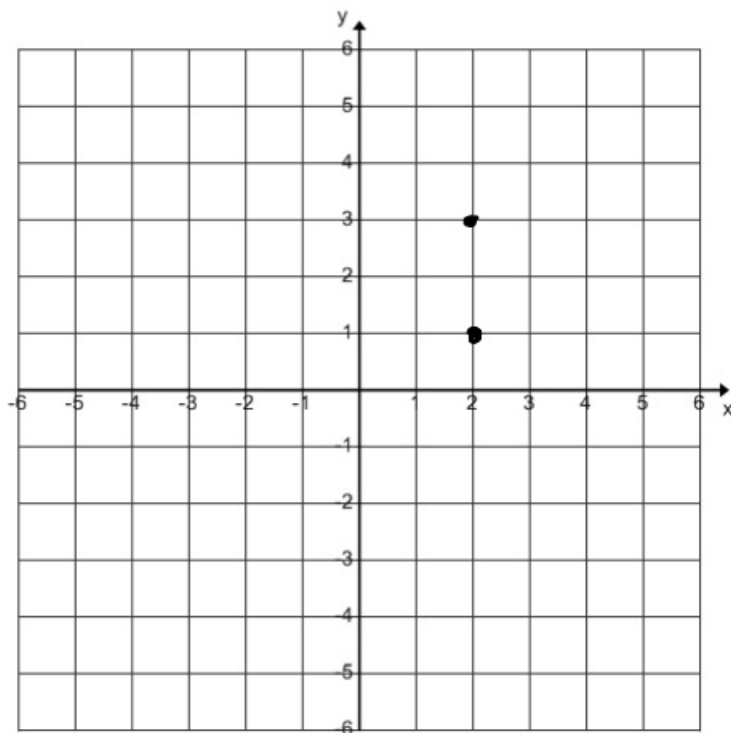
⑤ $\{(2,5)(3,5)(7,5)(8,12)(9,12)\}$

Domain: $\{2,3,7,8,9\}$

Range: $\{5,12\}$



Function: For each x -value,
there can only be
one y -value.



Are these functions

⑥ $\{(2, 7)(3, 8)(5, 7)\}$

Yes

⑦ $\{(1, 6)(2, 6)(3, 7)(1, 8)\}$

plus in $x=1$ $y=6, 8$

NOT A FUNCTION

10-2-17 4th Trg

If I ^{were} ~~was~~ President,
I would

Old day you were given

What is $3x-4$ when $x=-1$?

Now

$$f(x) = 3x - 4$$

$$f(-1) = 3 \cdot (-1) - 4 = -7$$

$$f(x) = x^2 - 3 \quad g(x) = -x + 4$$

$$\textcircled{1} f(-5) = (-5)^2 - 3$$
$$25 - 3 = 22$$

$$\textcircled{2} g(-4) = -(-4) + 4 = 8$$

$$h(x) = \frac{2x}{4}$$

$$\textcircled{3} h(-12) = \frac{2 \cdot (-12)}{4} = \frac{-24}{4} = -6$$

Domain vs. Range

x

y

$$\textcircled{4} \{ (2, 8)(3, 8)(5, 9) \}$$

$$\text{Domain: } \{ 2, 3, 5 \}$$

$$\text{Range: } \{ 8, 9 \}$$

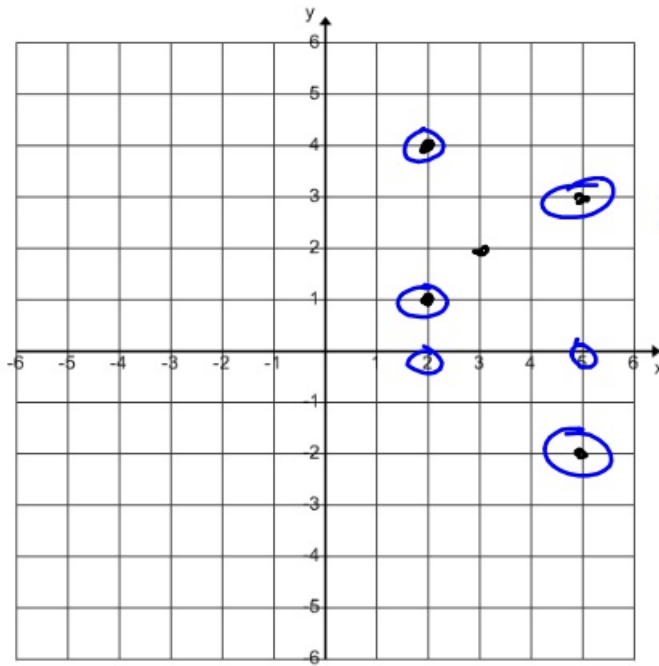
$$\textcircled{5} \text{ Simplify } \frac{\cancel{(x+2)}(x-1)}{\cancel{x+2}}$$

$$x-1 \quad [x \neq -2]$$

Domain is any #
as long as $x \neq -2$.

$$\mathbb{R} \text{ except } x \neq -2$$

Functions: For each x there
is only one y value



Are these functions

⑥ $\{ (2, 3), (4, 7), (9, 1), (2, 8) \}$

Not a function

⑦ $\{ (2, 7), (3, 7), (4, 7), (10, 11) \}$

Yes

