What's Going On?

Checking In

Homework Logs

Minds on

Wrapping Up Domain and Range

Action!

hWFffffedfasdf

Duffetion Creation

Consolidation Friday Quiz

Learning Goal - Given a relation, I will be able to:

- determine if the relation is a function
- represent the relation in proper function form
- identify its parent function
- determine and properly represent its domain and range

What's happening at

gilbertmath.com?

Soooo much!

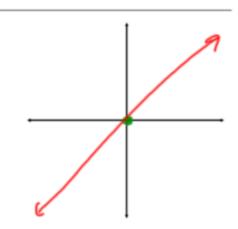
Minds on

Domain and Range

Wrapping it Up

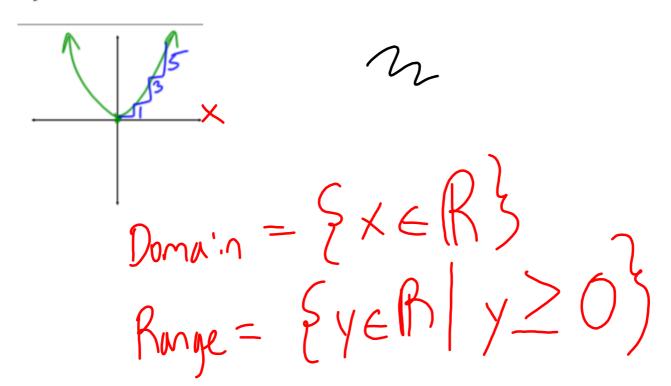
Linear Function

$$f(x) = x$$



Quadratic Function

$$f(x) = x^2$$



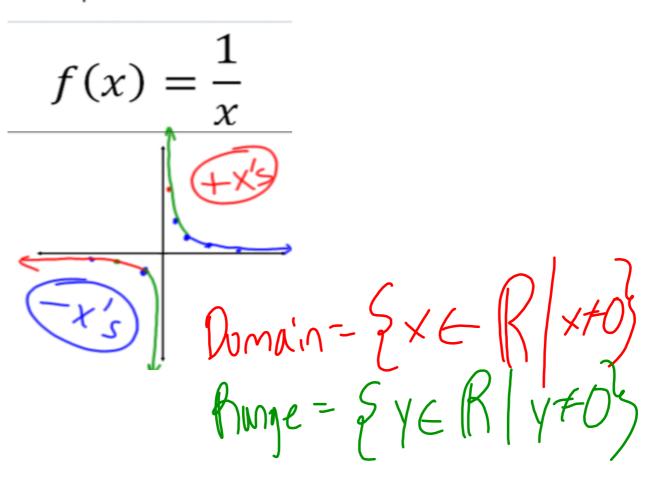
Square Root Function

$$f(x) = \sqrt{x}$$

$$Pamain = \begin{cases} x \in \mathbb{N} | x \ge 0 \end{cases}$$

$$Right = \begin{cases} y \in \mathbb{R} | y \ge 0 \end{cases}$$

Reciprocal Function

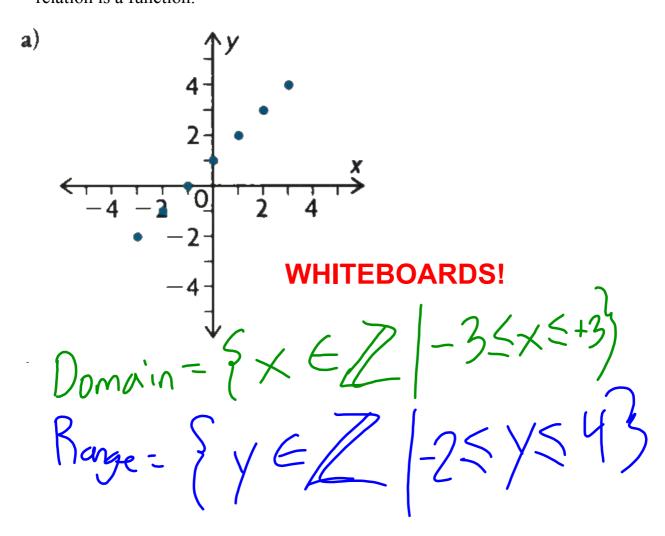


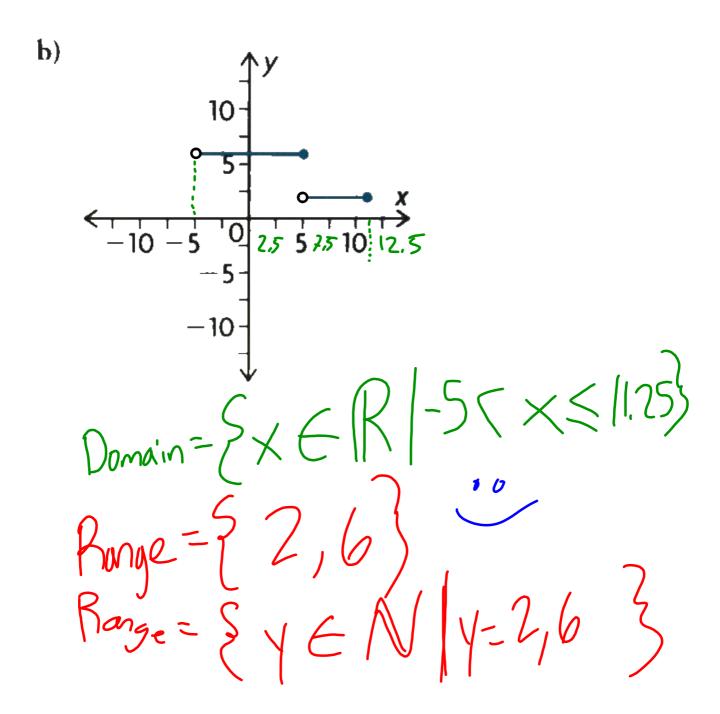
Absolute Value Function

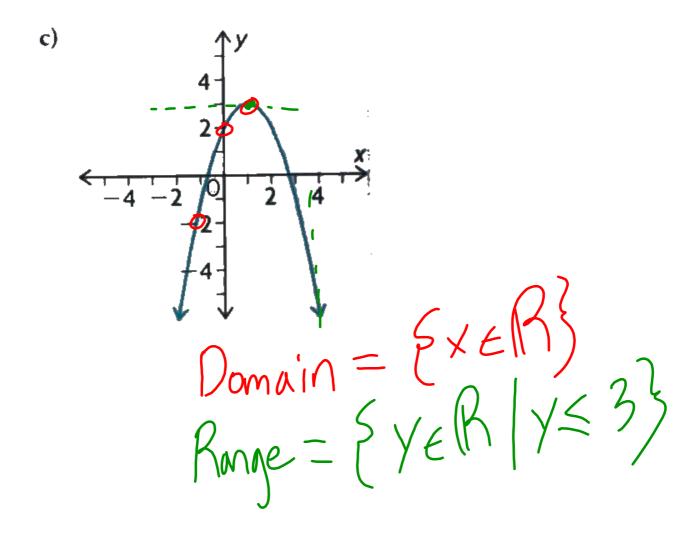
$$f(x) = |x|$$

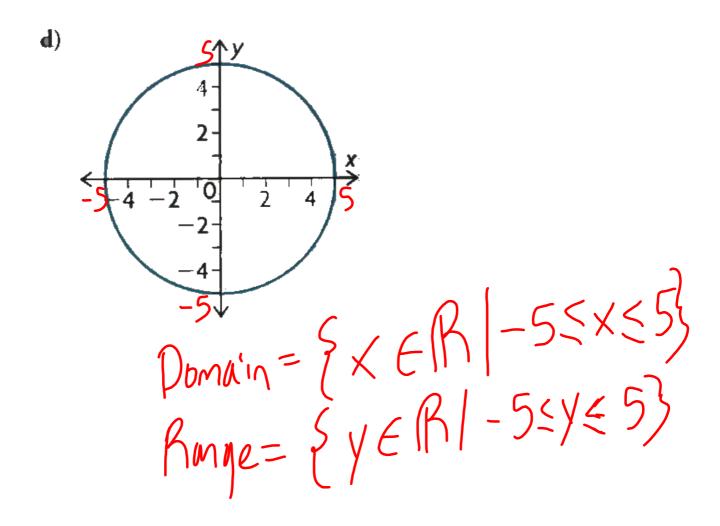
Example 1: See page 31 example 2.

For each relation, state the domain and range and whether the relation is a function.









Example 2:

Determine the domain and range of each function.

a)
$$f(x) = 2x - 3$$

Function?

Parent Function:

$$f(x) = X$$
Domain = $6 \times 6 \times 6$

Range =
$$\begin{cases} \\ \\ \\ \\ \end{cases} \in \mathbb{R}^3$$

Example 2:

Determine the domain and range of each function.

b)
$$g(x) = -3(x + 1)^2 + 6$$

Function?

Parent Function:
$$f(x) = x^2$$

Domain =
$$\{ \times \in \mathbb{R}^3 \}$$

Range =
$$\{ y \in R | y \leq 6 \}$$

Example 2:

Determine the domain and range of each function.

c)
$$h(x) = \sqrt{x+5} + 1$$

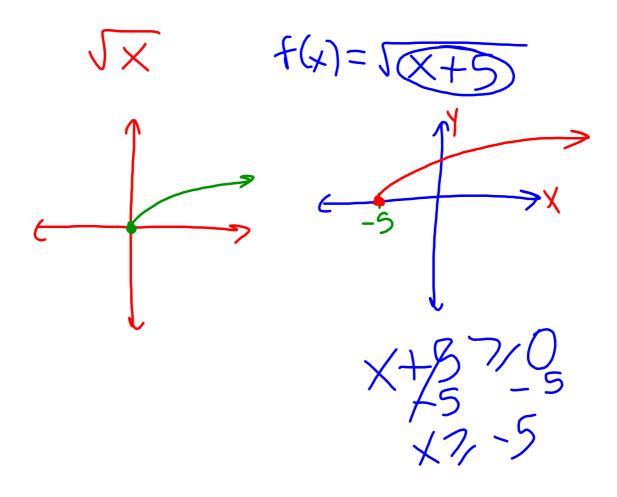
Function?

405

**We can't take the square root of a negative number!!

Parent Function:

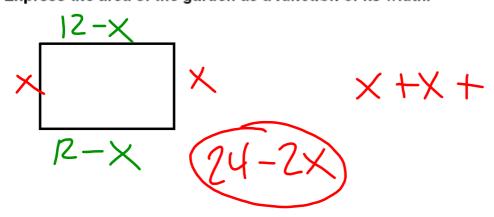
$$F(x) = \int X$$
Domain = $\begin{cases} 4 \times R \times 7 - 5 \end{cases}$
Range = $\begin{cases} 4 \times R \times 7 - 6 \end{cases}$



Example 3:

Vitaly and Sherry have 24 m of fencing to enclose a rectangular garden at the back of their house.

a) Express the area of the garden as a function of its width.



b) Determine the domain and range of the area function

Example 3:

Vitaly and Sherry have 24 m of fencing to enclose a rectangular garden at the back of their house.

a) Express the area of the garden as a function of its width.

P= W+ W+1 24=2w+l 24-2w=1

 $A(\omega) = (24-2\omega)(\omega)$ =24w-2w3

 $A(\omega) = -2\omega^2 + 24\omega$

b) Determine the domain and range of the area function

smallest width is O

If length=0, then 24-2w=0 kngth

24=2w 12:4

$$O = -2\omega(\omega - 12)$$

zeros are (O and 12.)

Vertex is @ w=6

$$A(6) = -2(6)^{2} + 24(6)$$

$$= 72$$

$$R = \{A(\omega) \in \mathbb{R} \mid 0 < A(\omega) \leq 72\}$$

Action!

Function Creation

Create two functions, f(x) and g(x). Each must be from a different family <u>no linear allowed!</u> (have a different parent function)

- a) Write in relation AND function form.
- b) State the family and parent function of each
- c) Determine f(8) g(4) (show your work)
- d) Determine f(3 4x) and g(5 + 2x) (show your work)
- d) Determine the domain and range of each.

Consolidation

Friday Quiz

Consolidation

Homework!

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