

C_01 Whiteboards Domain and Range

See solutions at right:

1. Find the domain for each function, without graphing.

a) $f(x) = \frac{2}{x-8}$

b) $f(x) = \frac{x+3}{2x-1}$

c) $f(x) = \frac{4x+9}{7}$

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

e) $f(x) = \sqrt{5x-3}$

f) $f(x) = \sqrt{9-2x}$

1. Find the domain for each function, without graphing.

a) $f(x) = \frac{2}{x-8}$

$x-8 \neq 0$
 $x \neq 8$

$\{x \mid x \neq 8, x \in \mathbb{R}\}$

b) $f(x) = \frac{x+3}{2x-1}$

$2x-1 \neq 0$
 $2x \neq 1$
 $x \neq \frac{1}{2}$

$\{x \mid x \neq \frac{1}{2}, x \in \mathbb{R}\}$

c) $f(x) = \frac{4x+9}{7}$

$\{x \mid x \in \mathbb{R}\}$

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

radicand ≥ 0
 $x \geq 0$

$\{x \mid x \geq 0, x \in \mathbb{R}\}$

e) $f(x) = \sqrt{5x-3}$

$5x-3 \geq 0$
 $5x \geq 3$
 $x \geq \frac{3}{5}$

$\{x \mid x \geq \frac{3}{5}, x \in \mathbb{R}\}$

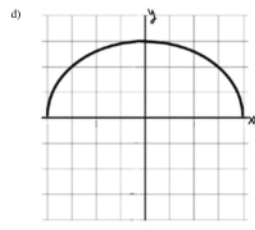
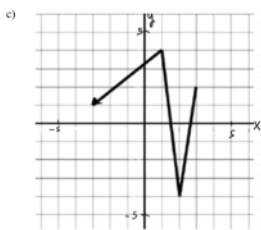
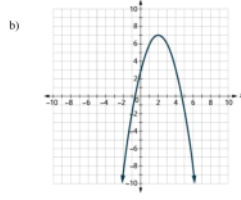
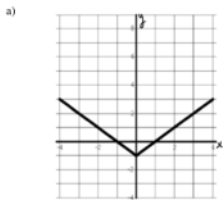
f) $f(x) = \sqrt{9-2x}$

$9-2x \geq 0$
 $9 \geq 2x$
 $x \leq \frac{9}{2}$

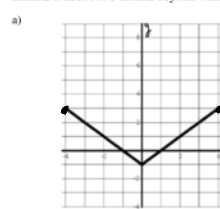
$\{x \mid x \leq \frac{9}{2}, x \in \mathbb{R}\}$

When you divide/multiply by a negative number, the inequality reverses direction

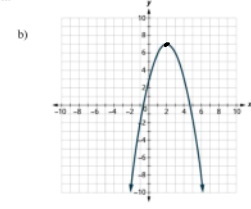
2. Find the domain and range for each graph below. If there are no arrows shown on the graph, assume it does NOT extend beyond what is shown.



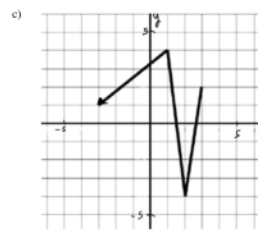
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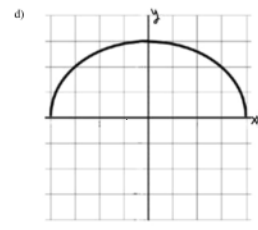
$\{x \mid -4 \leq x \leq 4, x \in \mathbb{R}\}$
 $\{y \mid -1 \leq y \leq 3, y \in \mathbb{R}\}$



$\{x \mid x \in \mathbb{R}\}$
 $\{y \mid y \leq 7, y \in \mathbb{R}\}$



$\{x \mid x \leq 3, x \in \mathbb{R}\}$
 $\{y \mid y \leq 4, y \in \mathbb{R}\}$



$\{x \mid -4 \leq x \leq 4, x \in \mathbb{R}\}$
 $\{y \mid 0 \leq y \leq 3, y \in \mathbb{R}\}$