EXAMPLES

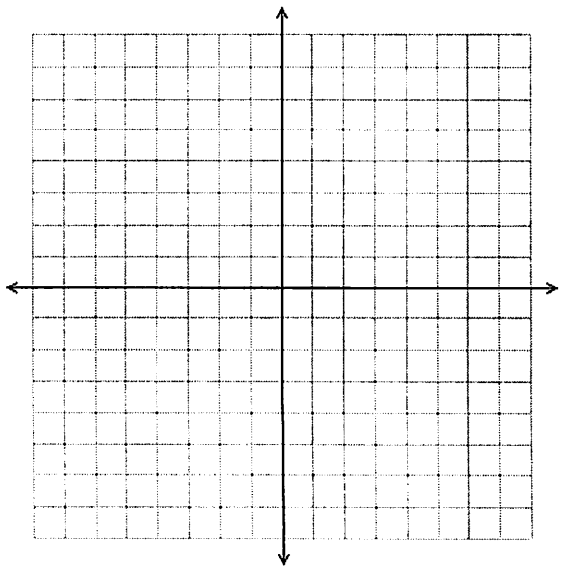
1. a. Determine the range for function $f(x) = 10 - 5x$ for the domain D: {-3, -2, -1, 0, 1, 2, 3}.

   b. Determine the range for the function $f(x) = 10 - 5x$ for the domain $\{-3 \leq x \leq 3\}$.

2. a. Determine the range for function $g(x) = x^2 - 5x$ for the domain D: {0, 1, 2, 3, 4, 5}.

   b. Determine the range for the function $g(x) = x^2 - 5x$ for the domain $\{0 \leq x \leq 5\}$.

3. On the graph below, sketch a linear function that is decreasing over the domain (-3, 6] and has a range of (7, -4].



I THINK I GOT IT?

1. The function $y = |5 - x|$ is graphed over the domain $\{x \mid 1 \le x \le 7\}$. State the range of the function over that interval.

I GOT IT!

2. Given: $g(x) = \dfrac{2}{x-3}$

   a. Evaluate $g(0)$, $g(4)$, $g(5)$, and $g(3)$.

   b. Write the domain of this function in set builder notation.

ANSWERS: 1) $[0, 4]$ 2) a. $g(0) = -\frac{2}{3}$ $g(4) = 2$ $g(5) = 1$ and $g(3) =$ undefined b. $\{x \mid x \neq -3\}$

EXAMPLES

1. a. Determine the range for function $f(x) = 10 - 5x$ for the domain D: {-3, -2, -1, 0, 1, 2, 3}.

Range: {-5, 0, 5, 10, 15, 20, 25}

b. Determine the range for the function $f(x) = 10 - 5x$ for the domain $\{-3 \le x \le 3\}$:

Range: $\{-5 \le y \le 25\}$

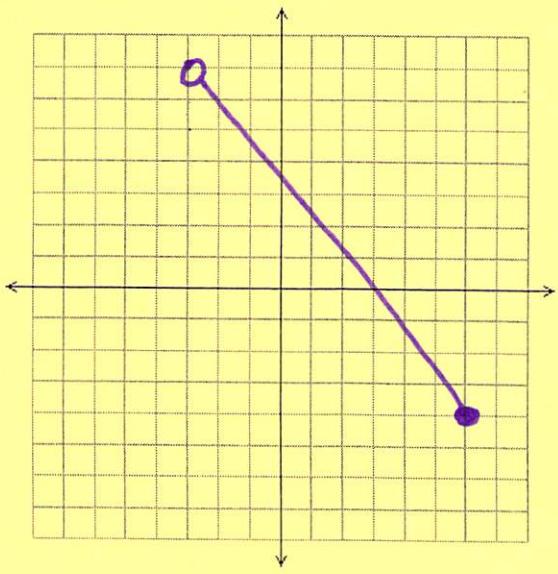
2. a. Determine the range for function $g(x) = x^2 - 5x$ for the domain D: {0, 1, 2, 3, 4, 5}.

Range: {-6, -4, 0}

b. Determine the range for the function $g(x) = x^2 - 5x$ for the domain $\{0 \le x \le 5\}$.

Range $\{-6 \le y \le 0\}$

3. On the graph below, sketch a linear function that is decreasing over the domain (-3, 6] and has a range of (7, -4].



I THINK I GOT IT?

1. The function $y = |5 - x|$ is graphed over the domain $\{x \mid 1 \le x \le 7\}$. State the range of the function over that interval.

$\{y \mid 0 \le y \le 4\}$

I GOT IT!

2. Given: $g(x) = \dfrac{2}{x-3}$

   a. Evaluate $g(0)$, $g(4)$, $g(5)$, and $g(3)$.

$g(0) = \frac{2}{0-3} = -\frac{2}{3}$

$g(5) = \frac{2}{5-3} = 1$

$g(4) \frac{2}{4-3} = 2$

$g(3) = \frac{2}{3-3} = \frac{2}{0}$

undefined

   b. Write the domain of this function in set builder notation.

Domain: $\{x \mid x \in \text{Reals}, x \neq 0\}$

ANSWERS: 1) $[0, 4]$ 2) a. $g(0) = -\frac{2}{3}$ $g(4) = 2$ $g(5) = 1$ and $g(3) =$ undefined b. $\{x \mid x \neq -3\}$