

1. a) Domain  $\{x: | 0, 5, 10, 15, 20\}$

Range  $\{y: | 0, 1, 2, 3, 4\}$

Function

b) Domain  $\{x: | 0, 1, 2, 4\}$

Range  $\{y: | 3, 1, 2, 3, 4\}$

Non-Function.

c) Domain  $\{x: | 0, 5, 1, 7, 15\}$

Range  $\{y: | 5, 6, 2, 9, 4\}$

Function

d) Domain:  $\{x: 10, 8, 10, 15, 20\}$   
Range:  $\{y: 1, 6, 1, 3, 4\}$ .

Function

2. a) Domain  $\{0 \leq x \leq 10, x \in \mathbb{R}\}$

Range:  $\{0 \leq y \leq 45, y \in \mathbb{R}\}$

Function.

2. b) <sup>Domain</sup>  
( $x \geq -4, x \in \mathbb{R}$ )

{Range  $y \geq -3, y \in \mathbb{R}$ }

Function

c) Domain:  $x \in \mathbb{R}$ .

Range:  $y \in \mathbb{R}$ .

Function

3. a) 10 seconds.

b) 6.5 seconds.

4. a)  $(-2, 2)$  therefore  $y$  is 2, when  $x$  is -2  
 b)  $(4, -1)$  therefore  $x$  is 4, when  $y$  is -1

6. a)  $a(x) = 68$

$$3(x-2) + 5 = 68 - 5$$

$$3(x-2) = 63$$

$$3x - 6 = 63 + 6$$

$$\frac{3x}{3} = \frac{69}{3}$$

$$x = 23$$

b)  $f(x) = 862$

$$-15x + 7 = f(x)$$

$$-15x + 7 = 862 - 7$$

$$\frac{-15x}{-15} = \frac{855}{-15}$$

$$x = -57$$

c)  $a(10)$

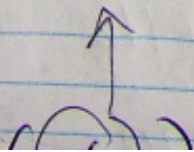
$$a(x) = 3(x-2) + 5$$

$$\begin{aligned} a(10) &= 3(10-2) + 5 \\ &= 3(8) + 5 \\ &= 24 + 5 \\ &= 29 \end{aligned}$$

d)  $h(100)$

$$h(x) = \frac{1}{2}x - 11$$

$$\begin{aligned} h(100) &= \frac{1}{2}(100) - 11 \\ &= \frac{100}{2} - 11 \\ &= 50 - 11 \\ &= 39 \end{aligned}$$



e)  $m(a(5))$

$$a(5)$$

$$m(14)$$

$$a(x) = 3(x-2) + 5$$

$$m(x) = 5x^2 - 9$$

$$= 3(5-2) + 5$$

$$m(14) = 5(14)^2 - 9$$

$$= 3(3) + 5$$

$$= 5(196) - 9$$

$$= 9 + 5$$

$$= 980 - 9$$

$$= 14$$

$$= 971$$