

A1.  $i(g(3))$ 

$$g(3)$$

$$i(5)$$

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

$$i(x) = 3x + x + x + x$$

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

$$i(5) = 3(5) + 5 + 5 + 5$$

$$i(5) = 15 + 5 + 5 + 5$$

$$i(5) = 30$$

$$= \frac{12-2}{2}$$

$$= \frac{10}{2}$$

$$= 5$$

C2.  $\begin{array}{r} h(8) - g(8) \\ 79 - 15 \\ \hline 64 \end{array}$ 

$$h(8)$$

$$h(x) = 3(x-3)^2 + 4$$

$$h(8) = 3(8-3)^2 + 4$$

$$h(8) = 3(5)^2 + 4$$

$$h(8) = 3(25) + 4$$

$$h(8) = 75 + 4$$

$$h(8) = 79$$

$$g(8)$$

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

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

$$= \frac{32-2}{2}$$

$$= \frac{30}{2}$$

$$= 15$$

$$= 15$$

$$6.3. \quad i(x) = 18$$

$$\begin{aligned} i(x) &= 3x + x + x + x \\ 18 &= 3x + x + x + x \\ \frac{18}{6} &= \frac{6x}{6} \\ 3 &= x \end{aligned}$$

$$A 4. \quad h(x) = 151$$

$$\begin{aligned} h(x) &= 3(x-3)^2 + 4 \\ 151 &= 3(x-3)^2 + 4 \\ \frac{147}{3} &= \frac{3(x-3)^2}{3} + \frac{4-4}{3} \\ \sqrt[3]{49} &= \sqrt[3]{(x-3)^2} \\ 7^{+3} &= x-3^{+3} \\ 10 &= x \end{aligned}$$

$$D 5. \quad h(7) - g\left(\frac{12}{2}\right)$$

$$52 - 23$$

(29)

$$\left. \begin{array}{l} h(x) = 3(x-3)^2 + 4 \\ h(7) = 3(7-3)^2 + 4 \\ h(7) = 3(4)^2 + 4 \\ h(7) = 3(16) + 4 \\ h(7) = 48 + 4 \\ h(7) = 52 \end{array} \right\} \begin{array}{l} i(x) = 3x + x + x + x \\ i(2) = 3(2) + 2 + 2 + 2 \\ i(2) = 6 + 2 + 2 + 2 \\ i(2) = 12 \end{array} \left. \begin{array}{l} g(x) = \frac{4x-2}{2} \\ g(12) = \frac{4(12)-2}{2} \\ = \frac{48-2}{2} \\ = \frac{46}{2} \\ = 23 \end{array} \right\}$$

6. Domain	Range	(function / Non f.)
a) $x \in \mathbb{R}$	$y \geq -2, y \in \mathbb{R}$	F
b) $-4 \leq x \leq 4, x \in \mathbb{R}$	$-2 \leq y \leq 5, y \in \mathbb{R}$	NF
c) $-3 \leq x \leq 4, x \in \mathbb{I}$	$-2 \leq y \leq 6, y \in \mathbb{I}$	F

7. Rate of Change	a)	b)	c)
Initial Amount	$\frac{3}{2}$	$-\frac{4}{2} = -2$	$\frac{3}{1}$
Equation	$y = mx + b$	$y = mx + b$	$y = mx + b$
	$y = \frac{3}{2}x + 3$	$y = -2x + 6$	$y = 3x - 3$
	$\frac{3}{2}$	$1$	$1$

8. a) Jaden was 0 km away.

b) Domain:  $\{0 \leq x \leq 2800, x \in \mathbb{R}\}$

Range:  $\{0 \leq y \leq 6000, y \in \mathbb{R}\}$

c) Rate of change =  $\frac{\text{rise}}{\text{run}}$

$$= \frac{6000}{2800}$$

$$= 2.14 \text{ m/revolutions}$$

Jaden travels 2.14m for every revolution of the tire.

d)  $y = mx + b$   
 $y = 2.14x + 0$

9.

a) The "initial amount" is  $-800$ .b) Rate of change =  $\frac{\text{rise}}{\text{run}}$   
 $= \frac{800}{200}$   
 $= 4 \text{ dollars/hat}$ 

c)  $y = mx + b$

$y = 4x - 800$

$y = 4(221) - 800$

$y = 884 - 800$

$y = 84$

You would make  $84$   
by selling 221 hats.

d)  $y = mx + b$

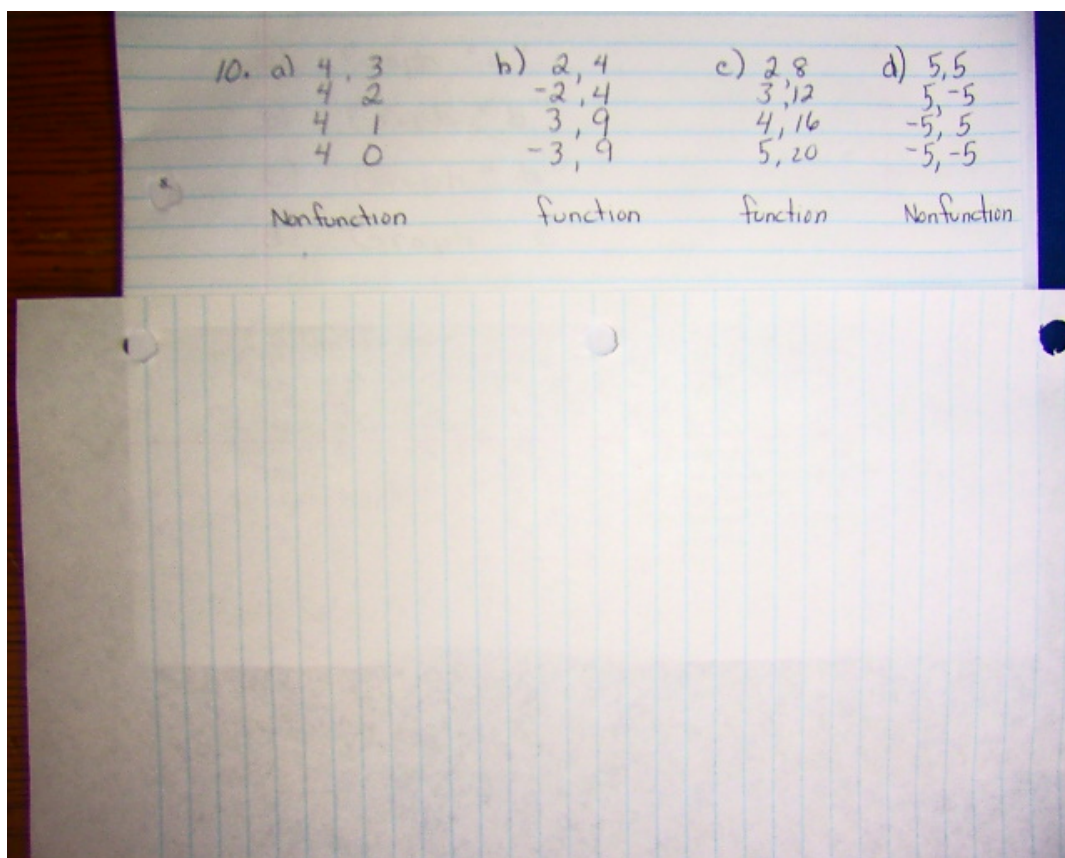
$y = 4x - 800$

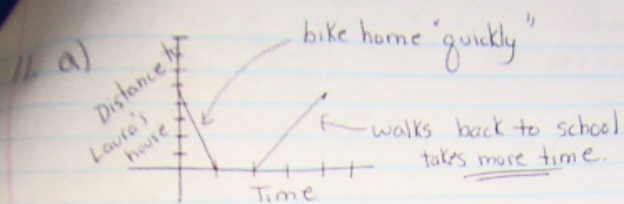
$1200 = 4x - 800$

$2000 = 4x$

$500 = x$

You would need to sell  
500 hats.





12. a) Non function      b) function.



13

Graphs:

$$\begin{array}{lll} \text{a) } y = mx + b & \text{b) } y = mx + b & \text{c) } y = mx + b \\ y = \frac{3}{2}x + 4 & y = \frac{4}{2}x + 8 & y = \frac{-3}{1}x - 2 \\ y = 1.5x + 4 & y = \frac{2}{1}x + 8 & \end{array}$$

Questions:

- a) Graph "a"
- b) Graph "b"
- c) Graph "b"
- d) Graph "c"