

## 4.5 Writing a Function Rule

\* Many real-world functional relationships can be represented by equations.

\* Review Problem 1 - "Writing a Function Rule" on pg. 262

\* Got it? 1)  $W = 50,000 + 420m$

\* Review Problem 2 - "Writing & Evaluating a Function Rule" on pg. 263

\* Got it?

2a)  $T = 12 + 15n$

$$T = 12 + 15(10)$$

$$T = 12 + 150$$

$$T = \$162 \text{ for a 10-day stay}$$

b)  $T = 12 + 15(5)$

$$T = \$87$$

No, making the stay shorter

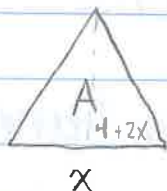
only halves the daily charge;

not the both charge.

\* In writing a function rule, it can be helpful to identify the independent & dependent variables.

\* Review Problem 3 - "Writing a Non-linear Function Rule" on pg. 264

\* Got it? 3) a)



$$A = \frac{1}{2}(x)(4+2x)$$

$$y = \frac{1}{2}x(4+2x)$$

$$y = 2x + x^2$$

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2}(x)(4+2x)$$

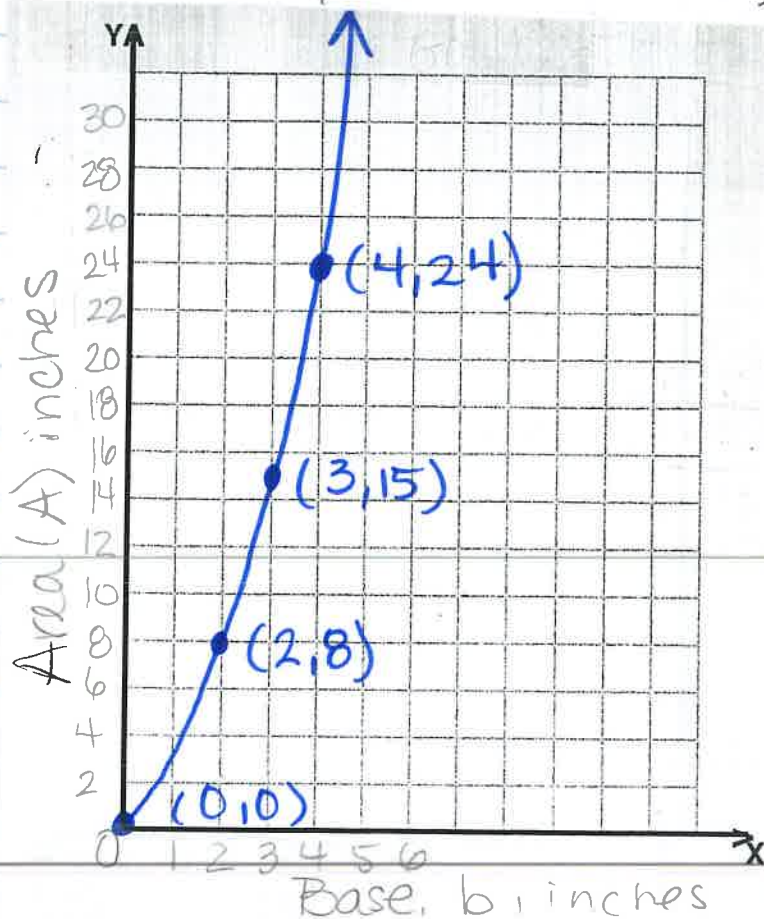
$$A = \frac{1}{2}(16)(4+2 \cdot 16)$$

$$A = 8(4+32)$$

$$A = 8(36)$$

$$A = 288 \text{ in}^2$$

$x$	$y = 2x + x^2$	$(x, y)$
0	$y = 2(0) + 1(0)^2$	(0, 0)
2	$y = 2(2) + 1(2)^2$	(2, 8)
4	$y = 2(4) + 1(4)^2$	(4, 24)
3	$y = 2(6) + 1(3)^2$	(3, 15)



4.5 pg. 265 #8-11, 12-24 even, 28, 33-36

$$8) \underline{y = 4x - 5}$$

$$10) \underline{a = \frac{3}{5}b - 7}$$

$$9) \underline{C = 8 + \frac{1}{2}n}$$

$$11) \underline{W = 2.5 + \frac{h}{3}}$$

$$12) \underline{e = 8.75n}$$

$$24) A = l \cdot w$$

$$A = (1.6w)(w)$$

$$14) \underline{L = 4a + 4n}$$

$$\underline{A = 1.6w^2}$$

$$16) \underline{h = 40 + 21t}$$

$$28) b = 29d + 13.95d + 3.80g$$

$$b = 29d + 13.95d + 3.80(12)$$

$$h = 40 + 21(45)$$

$$b = 42.95d + 3.80(12)$$

$$h = 40 + 945$$

$$\underline{b = 42.95d + 45.6}$$

$$\underline{h = 985 \text{ ft.}}$$

$$b = 42.95(9) + 45.6$$

$$18) \underline{p = 24 + 12c + 48}$$

$$b = 386.55 + 45.6$$

$$p = 72 + 12c$$

$$\underline{b = \$432.15}$$

$$p = 72 + 12c$$

$$p = 72 + 12(25)$$

$$\underline{p = 372 \text{ pages}}$$

$$20) V = \pi r^2 h$$

$$\underline{V = \pi r^2 (4r + 3)}$$

$$V = \pi (4)(11)$$

$$V = 44\pi$$

$$\underline{V = 138.23 \text{ in}^3}$$

$$V = \pi (2^2)(4 \cdot 2 + 3)$$

# Review

33)  $C = 50 - 2.99x$  (B)

34)  $-5 < h + 2 < 11$

$$\begin{array}{r} -5 < h + 2 & h + 2 < 11 \\ -2 & -2 & -2 & -2 \end{array}$$

$$-7 < h$$

$$h > -7 \text{ and } h < 9$$

$-7 < h < 9$  (G)

35)  $-ax + by^2 = c$ , solve for b

$$\frac{by^2 = c + ax}{y^2}$$

$b = \frac{c + ax}{y^2}$  (C)

A)

36)  $D = 0.1m^2 + 5m$   
 $D = 0.1(60)^2 + 5(60)$   
 $D = 0.1(3600) + 300$   
 $D = 360 + 300$   
 $D = 660 \text{ mg}$

The dosage is 660mg

convert

B)  $\frac{11b}{.45\text{Kg}} = \frac{2001b}{.45\text{Kg}}$

$x = 90 \text{ kg}$

$D = 0.1m^2 + 5m$   
 $D = 0.1(90)^2 + 5(90)$   
 $D = 1,260 \text{ mg}$

The correct dosage for a 200-lb person is 1,260mg

19)

$$A = \frac{1}{2}bh$$

$$A = \frac{1}{2}(5h+3)h$$

$$A = \left(\frac{5}{2}h + \frac{3}{2}\right)h$$

$$A = \frac{5}{2}h^2 + \frac{3}{2}h$$

simplified

$$h=6$$

$$A = \frac{5}{2}(6)^2 + \frac{3}{2}(6)$$

$$= \frac{5}{2}(\frac{18}{1}) + \frac{3}{2}(\frac{6}{1})$$

$$= 90 + 9$$

$$= 99 \text{ cm}^2$$