

Example 1: (Continued)

i.) $5 - 2x = -3$
 $\begin{array}{r} -5 \\ -2x = -8 \\ \hline -2 \end{array}$
 $x = 4$
 Check
 $5 - 2(4) = -3$
 $5 - 8 = -3$
 $-3 = -3$
 {4}

j.) $4x + 2x = -5 - 7$
 $\begin{array}{r} 6x = -12 \\ \hline 6 \end{array}$
 $x = -2$
 Check
 $4(-2) + 2(-2) = -5 - 7$
 $-8 - 4 = -12$
 $-12 = -12$
 {-2}

k.) $4 - (2x + 3) = -7$
 $4 - 2x - 3 = -7$
 $1 - 2x = -7$
 $\begin{array}{r} -1 \\ -2x = -8 \\ \hline -2 \end{array}$
 $x = 4$
 {4}

l.) $6(2 + 7x) + 8(x - 8) = 48$
 $12 + 42x + 8x - 64 = 48$
 $50x - 52 = 48$
 $\begin{array}{r} +52 \\ +52 \end{array}$
 $50x = 100$
 $\begin{array}{r} 50 \\ 50 \end{array}$
 $x = 2$
 {2}

m.) $\frac{x}{6} + \frac{2}{3} = -4$

n.) $4 - \frac{1}{3}(x - 9) = 11$

SEE ATTACHED SHEET

Solving Equations Using Geometry Figures

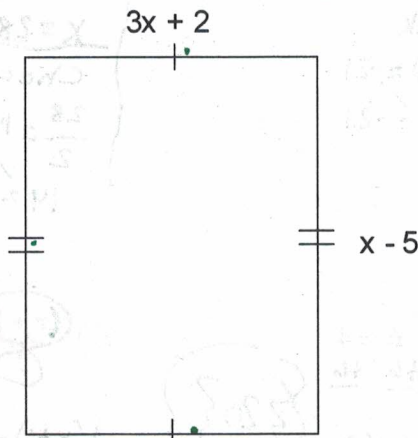
For Geometric Figures →

- Use the steps for solving normal equations, but apply the geometry formulas for area and perimeter.

Perimeter = Adding all sides
 $P_{\square} = 2l + 2w$
 Circumference = $2\pi r$
 $A_{\square} = s^2$
 $A_{\square} = lw$
 $A_{\Delta} = \frac{1}{2}bh$
 $A_{\circ} = \pi r^2$

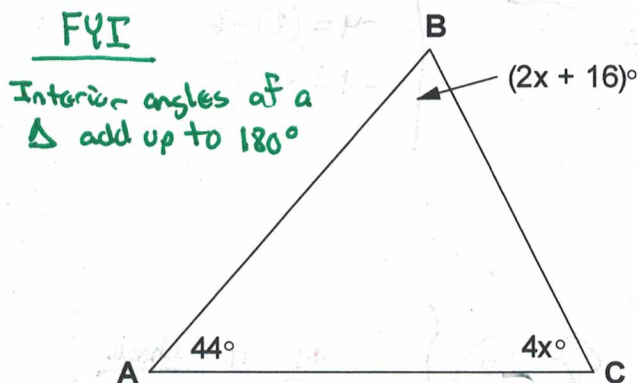
Example 2: Solve for each ~~matrix~~, the missing variables, or what is asked.

a.) Find the value of x if the perimeter is 50.



$P = 2l + 2w$
 $50 = 2(x - 5) + 2(3x + 2)$
 $50 = 2x - 10 + 6x + 4$
 $50 = 8x - 6$
 $\begin{array}{r} +6 \\ +6 \end{array}$
 $56 = 8x$
 $\begin{array}{r} 8 \\ 8 \end{array}$
 $x = 7$

b.) What is the value of angle B?



$44 + 4x + 2x + 16 = 180$
 $60 + 6x = 180$
 $\begin{array}{r} -60 \\ -60 \end{array}$
 $6x = 120$
 $\begin{array}{r} 6 \\ 6 \end{array}$
 $x = 20$
 LB
 $2(20) + 16$
 $40 + 16$
 $\angle B = 56^\circ$

This is not $\angle B!$

1.5 Solving Multi-Step Equations

Example 1: (continued)

$$m.) \quad \frac{x}{6} + \frac{2}{3} = -4$$

LCD

$$6 \left(\frac{x}{6} + \frac{2}{3} \right) = -4(6)$$

$$6 \left(\frac{1x}{6} \right) + 6 \left(\frac{2}{3} \right) = -24$$

$$1x + 4 = -24$$

-4 -4

NO MORE FRACTIONS!

$$x = -28$$

$$\{-28\}$$

* make the fractions into Integers by multiplying all terms by the LCD.

Denominators: 6, 3, and 1

LCD: 6

$$\frac{6}{6} = 1 \quad \frac{6}{3} = 2 \quad \frac{6}{1} = 6$$

(If you can not determine the LCD, multiply all the denominators together to get a common denominator.)

Mixed #	→	Improper Fraction
$3 \frac{2}{5}$	$\rightarrow (3 \cdot 5) + 2 \rightarrow$	$\frac{17}{5}$
$-8 \frac{2}{9}$	$\rightarrow (8 \cdot 9) + 2 \rightarrow$	$-\frac{74}{9}$

$$n.) \quad 4 - \frac{1}{3}(x-9) = 11$$

$$4 - \frac{1}{3}x + 3 = 11$$

$$-\frac{1}{3}x + 7 = 11$$

-7 -7

$$(-3) + \frac{1x}{3} = 4(-3)$$

$$x = -12$$

$$\{-12\}$$

* You cannot multiply by the LCD until you clear grouping symbols.

0.) $\frac{2}{3}k + \frac{1}{4}k = 22$ LCD: 12 ← (3·4·1)

LCD → $12\left(\frac{2}{3}k + \frac{1}{4}k\right) = 22(12)$ ← LCD

$8k + 3k = 264$ ← No fractions

$11k = 264$

$k = 24$

{24}

Perimeter is equal adding all the sides.

$P_{\square} = 4s$ $P_{\square} = 2l + 2w$



Circumference

$C = 2\pi r$
or
 πd

Area

$A_{\square} = s^2$

$A_{\square} = lw$

$A_{\Delta} = \frac{1}{2}bh$

$A_{\circ} = \pi r^2$