

UNIT REVIEW II

1. Solve each of the following equations.

a)  $\frac{-4n}{-4} = \frac{-16}{-4}$  divide each side by  $-4$

$$\boxed{n=4}$$

b)  $x - 9 = 17$  add  $+9$  to both sides

$$\boxed{x=26}$$

c)  $\frac{b}{3} = -2$  multiply each side by 3

$$\boxed{b=-6}$$

c)  $-2x + 4 = 14$

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

$$\boxed{x=-5}$$

d)  $5x + 3x - 16 - 2x + 20 = 4x + x - 30$

$$6x + 4 = 5x - 30$$

$$x + 4 = -30$$

$$\boxed{x=-34}$$

e)  $3(x-1) - 2(x+1) = 5x$

$$3x - 3 - 2x - 2 = 5x$$

$$x - 5 = 5x$$

$$\frac{-5}{4} = \frac{4x}{4}$$

$$-5/4 = x$$

$$\therefore x = -5/4$$

f)  $(x-2) - (x+1) = -5(2x-1)$

$$x - 2 - x - 1 = -10x + 5$$

$$-3 = -10x + 5$$

$$\frac{-8}{-10} = \frac{-10x}{-10}$$

$$4/5 = x$$

$$\therefore x = 4/5$$

g)  $\frac{3x}{5} - \frac{2x}{3} = 2$  LCD = 15

$$15 \cdot \frac{3x}{5} - 15 \cdot \frac{2x}{3} = 15 \cdot 2$$

$$9x - 10x = 30$$

$$\frac{-x}{-1} = \frac{30}{-1}$$

$$\boxed{x=-30}$$

h)  $\frac{(x-2)}{6} - \frac{(x-2)}{5} = 2$  LCD = 30

$$30 \cdot \frac{(x-2)}{6} - 30 \cdot \frac{(x-2)}{5} = 30 \cdot 2$$

$$5(x-2) - 6(x-2) = 60$$

$$5x - 10 - 6x + 12 = 60$$

$$-x + 2 = 60$$

$$\frac{-x}{-1} = \frac{+58}{-1}$$

$$\boxed{x=-58}$$

2) You can convert from Fahrenheit to Celsius degrees by using the formula:  $F = 2(°C + 15)$ .

a) Solve for C

$$F = 2(C + 15) \quad \text{distribute 2 over}$$

$$F = 2C + 30$$

$$\frac{F-30}{2} = \frac{2C}{2}$$

$$\frac{F-30}{2} = C$$

$$\therefore °C = \frac{F-30}{2}$$

b) What is  $81°F$  converted to  $°C$ ?

$$C = \frac{F-30}{2}$$

$$C = 25.5$$

$$= \frac{81-30}{2}$$

$$= \frac{51}{2}$$

$\therefore$  It's  $25.5°C$

3) Determine the length of each side of a triangle if the sides are:  $x$ ,  $x+7$ , and  $2x-5$  and the perimeter is  $18\text{cm}$ .

[Write an equation, and show your work.]

Consider drawing a diagram.

$$x + x + 7 + 2x - 5 = 18$$

$$4x + 2 = 18$$

$$\frac{4x}{4} = \frac{16}{4}$$

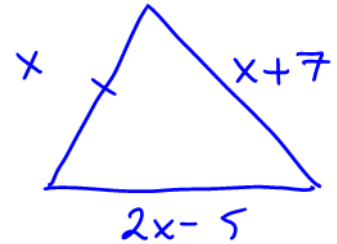
$$\boxed{x=4}$$

$\therefore$  Sides are

①  $x = 4\text{cm}$

②  $x+7$   
 $= 4+7$   
 $= 11$  }  $11\text{cm}$

③  $2x-5$   
 $= 2(4)-5$   
 $= 8-5$  }  $3\text{cm}$



4) Gimli solved two equations. In each he made an error. Identify his error and explain what he did wrong.

$$3x + 5 = -2$$

$$\begin{matrix} +5 & +5 \\ \hline 3x & = 3 \end{matrix}$$

a.

$$3x = 3$$

$$\div 3 \quad \div 3$$

$$x = 1$$

Error 1: To eliminate  $+5$ , Gimli was supposed to subtract 5

$$x + 4 = +2x - 7$$

$$\begin{matrix} -2x & -2x \\ \hline -3x & +4 = 7 \end{matrix}$$

b.

$$-4 = -4$$

$$-3x = 3$$

$$\div -3 \quad \div -3$$

$$x = -1$$

Error:  $x - 2x$  is  $-1x$ . Gimli made an arithmetic mistake