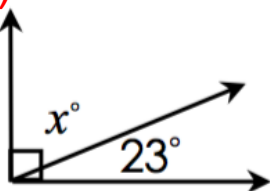


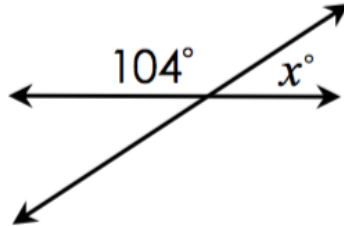
**Do Now**Find the value of  $x$  in each diagram.

1)



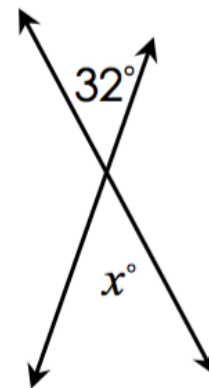
$$\begin{array}{r} x + 23 = 90 \\ -23 \quad -23 \\ \hline x = 67^\circ \end{array}$$

2)



$$\begin{array}{r} 104 + x = 180 \\ -104 \quad -104 \\ \hline x = 76^\circ \end{array}$$

3)



$$x = 32^\circ$$

Jan 8-4:59 PM

**Homework Answers**

2)  $x = 9$   
 $\angle ABD = 68$

7)  $x = 19$   
 $\angle EFG = 139$   
 $\angle IFH = 49$   
 $\angle EFD = 41$

9)  $x = 7$   
 $32$   
 $58$

3)  $x = 12$

10)  $x = 17$   
 $157$   
 $23$

6)  $x = 3$   
 $\angle DBE = 64$   
 $\angle EBC = 26$

8)  $x = 8$   
 $\angle KNK = 47$   
 $\angle KNM = 133$

$$\begin{array}{r} 3x + 20 = 6x - 16 \\ -3x \quad -3x \\ \hline 20 = 3x - 16 \end{array}$$

$$\begin{array}{r} 20 = 3x - 16 \\ +16 \quad +16 \\ \hline 36 = 3x \end{array}$$

$$\begin{array}{r} 36 = 3x \\ \div 3 \quad \div 3 \\ \hline 12 = x \end{array}$$

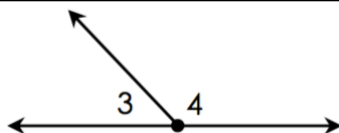
$$\begin{array}{r} 5x + 7 = 8x - 17 \\ -5x \quad -5x \\ \hline 7 = 3x - 17 \end{array}$$

$$\begin{array}{r} 7 = 3x - 17 \\ +17 \quad +17 \\ \hline 24 = 3x \end{array}$$

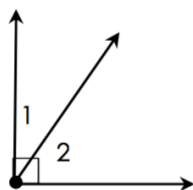
$$\begin{array}{r} 24 = 3x \\ \div 3 \quad \div 3 \\ \hline 8 = x \end{array}$$

Jan 9-7:04 AM

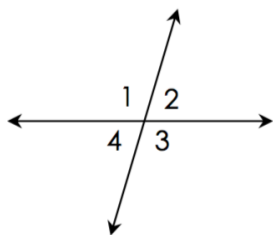
Supplementary  
Sum =  $180^\circ$



Complementary  
Sum =  $90^\circ$



Vertical



$$\angle 2 \cong \angle 4$$

$$\angle 1 \cong \angle 3$$

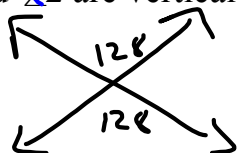
Jan 8-7:15 PM

### Finding Angle Measurements "in words"

If  $\angle G$  and  $\angle H$  are supplementary angles and  $m\angle H = 51^\circ$ , find  $m\angle G$ .

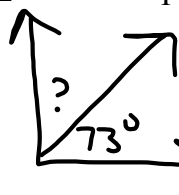
$$\begin{array}{r} 51 + g = 180 \\ - 51 \phantom{+ 0} \\ \hline g = 129^\circ \end{array}$$

If  $\angle 1$  and  $\angle 2$  are vertical angles and  $m\angle 1 = 128^\circ$ , find  $m\angle 2$ .



$$m\angle 2 = 128^\circ$$

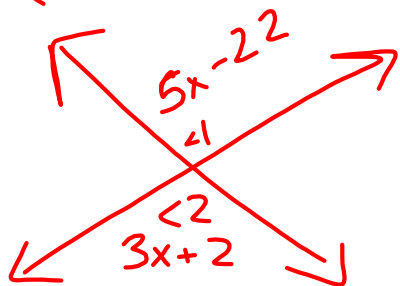
If  $\angle J$  and  $\angle K$  are complementary angles and  $m\angle K = 73^\circ$ , find  $m\angle J$ .



$$\begin{array}{r} 90 - 73 \\ \hline m\angle J = 17^\circ \end{array}$$

Jan 8-5:10 PM

If  $\angle 1$  and  $\angle 2$  are vertical angles and the  $m\angle 1 = 5x - 22^\circ$  and  $m\angle 2 = 3x + 2^\circ$ . Find the  $m\angle 2$



$$m\angle 2 = 3x + 2$$

$$m\angle 2 = 3(12) + 2$$

$$m\angle 2 = 36 + 2$$

$$m\angle 2 = 38$$

$$5x - 22 = 3x + 2$$

$$- 3x$$

$$- 3x$$

$$2x - 22 = 2$$

$$+ 22 \quad + 22$$

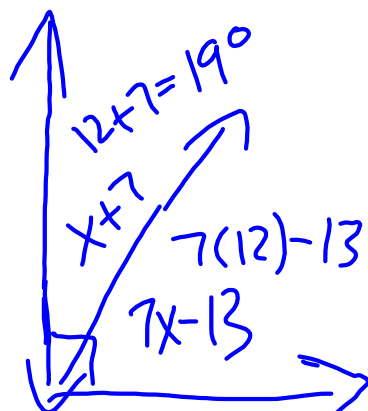
$$2x = 24$$

$$\frac{24}{2}$$

$$x = 12$$

Jan 8-5:10 PM

If  $\angle 1$  and  $\angle 2$  are complementary angles and The  $m\angle 1 = x + 7^\circ$  and  $m\angle 2 = 7x - 13^\circ$ . Find the  $m\angle 1$  &  $m\angle 2$ .



$$x + 7 + 7x - 13 = 90$$

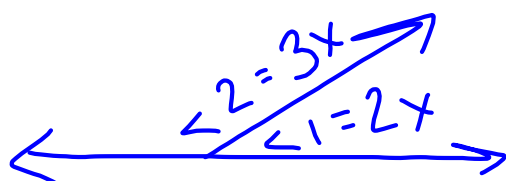
$$8x - 6 = 90$$

$$8x = 96$$

$$x = 12$$

Jan 8-5:10 PM

If  $\angle 1$  and  $\angle 2$  are supplementary angles and their measures are in the ratio of 2:3. Find the  $m\angle 1$  &  $m\angle 2$ .



$$m\angle 1 = 2x$$

$$= 2(36)$$

$$m\angle 1 = 72^\circ$$

$$2x + 3x = 180$$

$$\frac{5x}{5} = \frac{180}{5}$$

$$x = 36$$

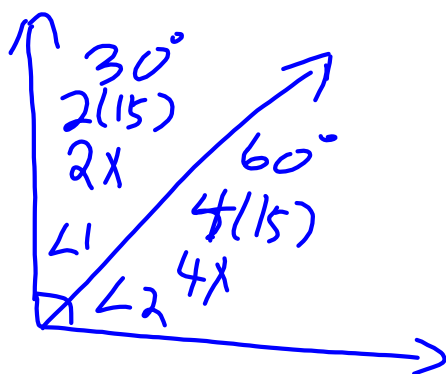
$$m\angle 2 = 3x$$

$$= 3(36)$$

$$m\angle 2 = 108^\circ$$

Jan 8-5:18 PM

If  $\angle 1$  and  $\angle 2$  are complementary and their measures are in the ratio of 2:4. Find the  $m\angle 1$  &  $m\angle 2$ .



$$2x + 4x = 90$$

$$\frac{6x}{6} = \frac{90}{6}$$

$$x = 15$$

Jan 9-6:47 AM