

I can use appropriate vocabulary/notation: \_\_\_\_\_

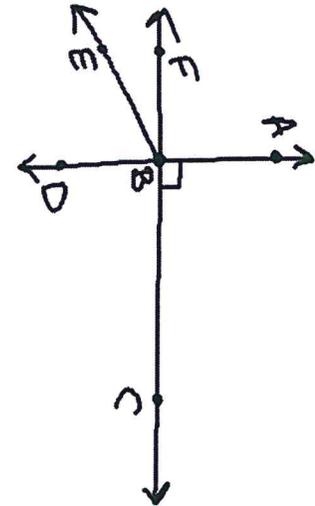
1.) Use the diagram to the right to:

"Some Answers may vary"

a. Name a pair of supplementary angles:  $\angle ABF$  &  $\angle FBD$

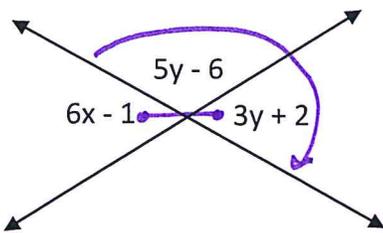
b.  $\angle EBD$  and  $\angle FBE$  are Complementary Angles

c. Give an example of vertical angles:  $\angle ABF$  and  $\angle DBC$



I can use properties of angles to determine measures: \_\_\_\_\_

2.) State the relationship between the angles to justify your equation and then solve for x and y using properties of angles.



1. Solve for y

$$5y - 6 + 3y + 2 = 180^\circ \text{ Supp. Angles}$$

$$8y - 4 = 180^\circ$$

$$\frac{8y}{8} = \frac{184}{8}$$

$$\boxed{y = 23}$$

C.L.T  
Add 4  
divide by 8

2. Solve for x

$$6x - 1 = 3y + 2$$

$$6x - 1 = 71$$

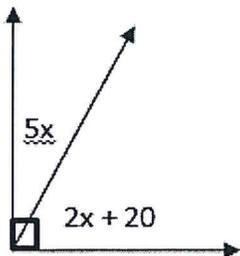
$$\begin{array}{r} +1 \\ +1 \end{array}$$

Vertical angles.  
replace y by 23  
Add 1

$$\frac{6x}{6} = \frac{72}{6} \text{ divide by 6}$$

$$\boxed{x = 12}$$

3.) State the relationship between the angles to justify your equation and then solve for x.



$$5x + 2x + 20 = 90^\circ$$

$$7x + 20 = 90^\circ$$

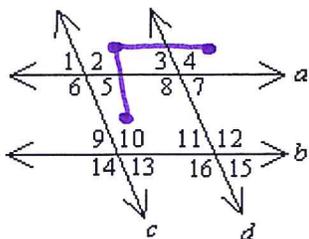
$$\begin{array}{r} -20 \\ -20 \end{array}$$

$$\frac{7x}{7} = \frac{70}{7}$$

$$\boxed{x = 10}$$

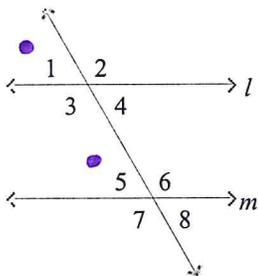
Complementary Angles  
C.L.T  
minus 20  
divide by 7

4.) If  $a \parallel b$  and  $c \parallel d$ , prove that  $\angle 4 \cong \angle 10$ . Justify every equation that you used.



Statement	Reason
$\angle 4 \cong \angle 2$	Corresponding Angles
$\angle 2 \cong \angle 10$	Corresponding Angles
$\angle 4 \cong \angle 10$	Replace 2 by 10.

5.) Find the value of the variable if  $m \parallel l$ ,  $m \angle 1 = 7x - 12$  and  $m \angle 5 = 5x + 6$ . Justify the equations.



$$\begin{array}{r}
 7x - 12 = 5x + 6 \\
 -5x \quad -5x \\
 \hline
 2x - 12 = 6 \\
 +12 \quad +12 \\
 \hline
 2x = 18 \\
 \frac{2x}{2} = \frac{18}{2} \\
 \boxed{x = 9}
 \end{array}$$

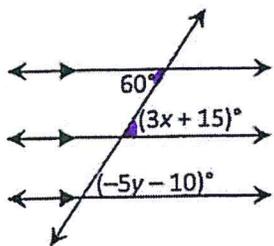
Corresponding Angles.  
minus  $5x$

Add 12

divide by 2

Answer.

6.) Solve for  $x$  and  $y$ . Justify each step.



1) Find  $x$

$$\begin{array}{r}
 3x + 15 = 60 \\
 -15 \quad -15 \\
 \hline
 3x = 45 \\
 \frac{3x}{3} = \frac{45}{3} \\
 \boxed{x = 15}
 \end{array}$$

Alt-interior  
minus 15

divide by 3

2) Find  $y$

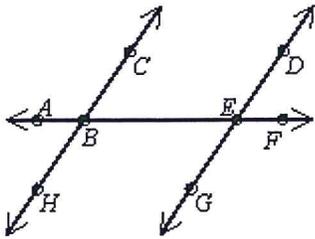
$$\begin{array}{r}
 3x + 15 = -5y - 10 \\
 60 = -5y - 10 \\
 +10 \quad +10 \\
 -5y = 70 \\
 \boxed{y = -14}
 \end{array}$$

Corresponding Angles

Replace  $x$  by 15

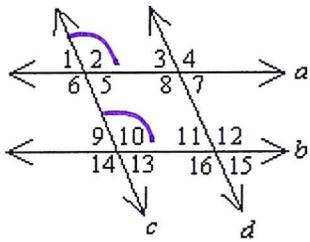
Add 10

7.) Identify 2 Consecutive Interior Angles. *next to each other (back to back)*



Answers may vary  
 $\angle ABC$  and  $\angle BED$ .

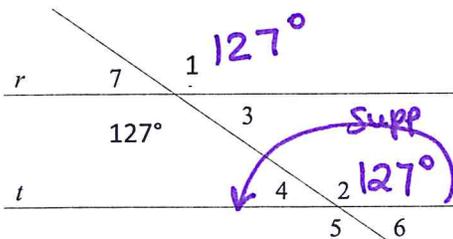
8.) Identify 2 sets of Corresponding Angles.



$\angle 2$  and  $\angle 10$   
 $\angle 3$  and  $\angle 11$

"Answers may vary"

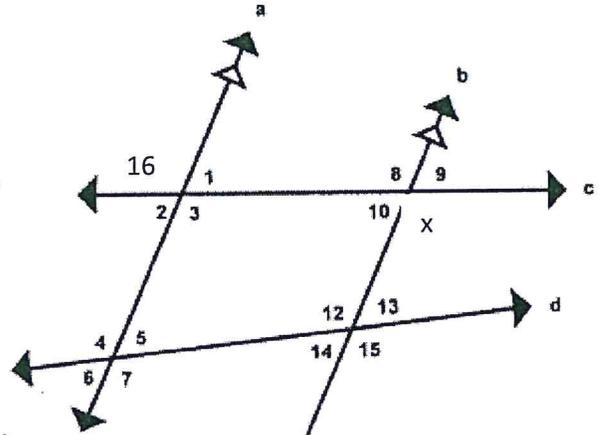
9.) Line  $r$  is parallel to line  $t$ . Determine the  $m\angle 4$  and the correct justification:



$m\angle 4 = 180^\circ - 127$  Supp. Angles.

$m\angle 4 = 53^\circ$

10.) Lines  $a$ ,  $b$ ,  $c$  and  $d$  are shown below and  $a \parallel b$ . Name all angles that are supplementary to  $\angle x$ .



Ex

$\angle 10$  and  $\angle x$

$\angle 9$  and  $\angle x$

$\angle 13$  and  $\angle x$  -----

many more ---

11.) The midpoint of segment  $RQ$  is  $(-1, 0)$ , point  $R$  is located at  $(-3, 4)$  the coordinates of endpoint  $Q$  are:

a)  $(-5, 8)$

b)  $(-4, 1)$

c)  $(1, 2)$

d)  $(1, -4)$

$(1, -4)$

$$-1 = \frac{-3+x}{2}$$

$$-2 = -3 + x$$

$$+3 \quad +3$$

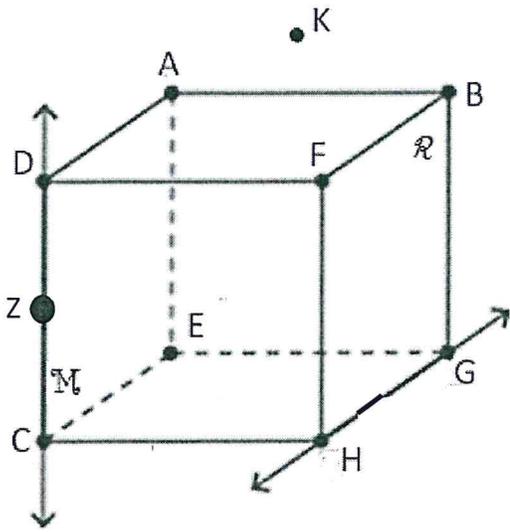
$$x = 1$$

$$0 = \frac{4+y}{2}$$

$$0 = 4 + y$$

$$-4 \quad -4$$

$$y = -4$$



Use the above figure to answer the following questions.

12.) Name for plane M in two different ways (left side of the box)

"Answers may Vary" Any 3 points on the plane  
 ZEC, ADZ, .... that are not Collinear.

13.) Identify a pair of opposite rays.

$\vec{ZD}$  and  $\vec{ZC}$

14.) Where is the intersection of \_\_\_\_\_ and \_\_\_\_\_?

"G"  $\vec{HG}$  and  $\vec{BG}$

15.) Name 3 collinear points.  $\rightarrow$  They line up .

D, Z, and C .