

Goal Setting

-Look at the standards for the unit and decide what are 2 goals.

Error Analysis

-Here are 4 groups of answers.
Lets look through and see
what is done correctly and
how to improve when it isn't.

$$m\angle A \text{ is } 3x + 5 \qquad m\angle B \text{ is } 2x - 15$$

$$\text{Comp} = 90^\circ$$

$$\begin{array}{r} 3x + 5 = 2x - 15 \\ \underline{-2x} \quad \underline{-2x} \\ x + 5 = -15 \\ \underline{-5} \quad \underline{-5} \\ x = -20 \end{array} \quad \begin{array}{r} 90^\circ \\ \underline{+20} \end{array}$$

$$m\angle A \text{ is } 3x + 5 \text{ and } m\angle B \text{ is } 2x - 15$$

$\angle A$ and $\angle B$ are complementary

$$\begin{array}{r} 3x + 5 = 90 \\ 2x - 15 = 90 \end{array} \quad \times$$

$$\begin{aligned}
 m\angle A &= 3x+5 \\
 m\angle B &= 2x-15 \\
 3x+5 + 2x-15 &= 90 \\
 5x-10 &= 90 \\
 5x &= 100 \\
 x &= 20
 \end{aligned}$$

$$\begin{array}{r}
 5x+5-15 \quad | \quad 90 \\
 -5 \quad \quad \quad | \quad -5 \\
 \hline
 5x-15 = 85
 \end{array}$$

$$\begin{aligned}
 3x+5 &= 2x-15 \\
 5x-10 &= 90 \\
 x &= 20
 \end{aligned}$$

$$m\angle A = 3x+5 \quad m\angle B = 2x-15$$

$$3x+5 + 2x-15 = 90$$

$$5x-10 = 90 \quad \angle A = 20$$

$$\frac{5x}{5} = \frac{100}{5} \quad \times$$

$$x = 20$$

$$3x + 5 + 2x - 15 = 90$$

$$5x - 10 = 90$$

$$\begin{array}{r} +10 \\ \hline \end{array}$$

$$\begin{array}{r} 5x = 100 \\ \hline 5 \end{array}$$

$$x = 20$$

$$\begin{array}{r} 3x + 5 = 20 \\ -5 \quad -5 \\ \hline \end{array}$$

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

$$\begin{array}{r} 2x - 15 = 20 \\ +15 \quad +15 \\ \hline \end{array}$$

$$\frac{2x - 15}{2} = 7$$



$$5x - 10 = 90$$

$$\frac{5x}{5} = \frac{80}{5}$$

$$3x+5+2x-15=90$$

$$5x-10=90$$

$$+10 \quad +10$$

$$\frac{5x}{5} = \frac{100}{5}$$

$$x=20$$

$$3(20)+5$$

$$60+5$$

$$\angle A = 65$$

$$m\angle A = 65^\circ$$

$$3x+5+2x-15=90^\circ$$

$$5x-10=90^\circ$$

$$+10 \quad +10$$

$$3(20)+5$$

$$60+5$$

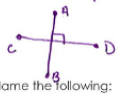
$$\frac{5x}{5} = \frac{100}{5}$$

$$x=20$$

$$m\angle A = 65^\circ$$

1. Interpret the following statements in words and then draw a picture:

a. $\overline{AB} \perp \overline{CD}$ Perpendicular



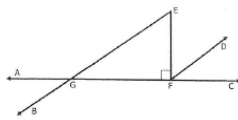
b. $m\angle X = 68^\circ$



c. $m \parallel n$ Parallel



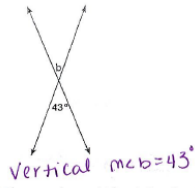
2. Name the following:



- a) a linear pair $\angle GFE$ $\angle EFC$
- b) a pair of supplementary angles $\angle AGB$ $\angle BGF$
- c) a pair of complementary angles $\angle EFD$ $\angle CFD$
- d) a pair of vertical angles $\angle AGB$ $\angle EGF$
- e) two right angles $\angle EFG$ $\angle EFC$

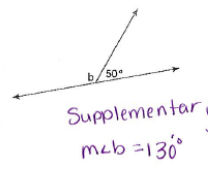
3. Identify the types of angles relationships shown. Then find the measure of the missing angle.

a.



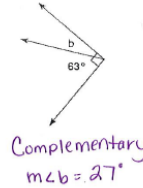
Vertical $m\angle b = 43^\circ$

b.



Supplementary $m\angle b = 130^\circ$

c.



Complementary $m\angle b = 27^\circ$

4. Linear pairs could be defined as being supplementary angles because they always add up to 180° . Are all supplementary angles also linear pairs? Explain.

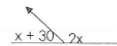
NO, they don't have to be adjacent to be Supplementary

5. Find the angle measures of x, y, and z.



$m\angle x = 50^\circ$
 $m\angle y = 130^\circ$
 $m\angle z = 50^\circ$

6. Solve for x.



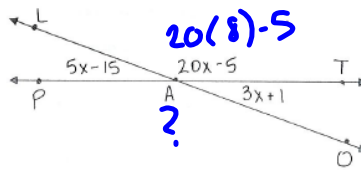
$x = 50^\circ$

$$x + 30 + 2x = 180$$

9) Find each of the following:

- a) $x = 8$
- b) $m\angle LAT = 155^\circ$
- c) $m\angle TAO = 25^\circ$
- d) $m\angle PAO = 155^\circ$

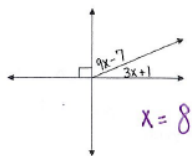
$180 - 25$
←



$$5x - 15 + 20x - 5 = 180$$

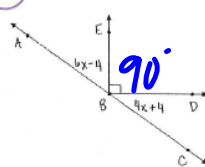
$$6x - 4 + 4x + 4 + 90 = 180$$

10. Find the value of x.



$$x = 8$$

11. Find the $m\angle DBC$

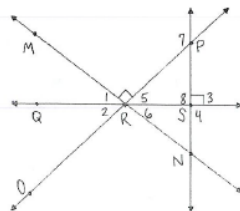


$$x = 9$$

$$m\angle DBC = 40^\circ$$

12. True or False?

- a. $\angle PRN$ is acute. **False**
- b. $\angle 4 \cong \angle 8$ **True**
- c. $m\angle 5 + m\angle 6 = 90$ **True**
- d. $\overline{QR} \perp \overline{PR}$ **False**
- e. $\angle 7$ is obtuse **True**

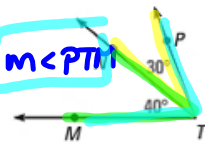


Angle Addition

If point D lies in the interior of $\angle ABC$, then $m\angle ABD + m\angle DBC = m\angle ABC$.

Example 1:

Find the measure of $\angle PTM$:



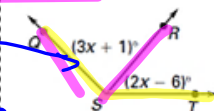
$m\angle PTN + m\angle NTM = m\angle PTM$

$30^\circ + 40^\circ = m\angle PTM$

$70^\circ = m\angle PTM$

Example 2:

Given $m\angle QST = 135^\circ$, find $m\angle QSR$.



$m\angle QSR + m\angle RST = m\angle QST$

$3x + 1 + 2x - 6 = 135$

$5x - 5 = 135$

$5x = 140$

$x = 28$

$m\angle QSR = 3x + 1$

$m\angle QSR = 3(28) + 1$

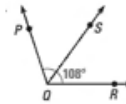
$m\angle QSR = 85^\circ$

Angle Bisector

A ray that divides an angle into two congruent angles (two angles with equal measure).

Example 1:

\overline{QS} bisects $\angle PQR$. Find $m\angle PQS$.



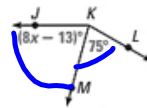
$m\angle PQS = m\angle RQS$

$m\angle PQS + m\angle RQS = m\angle PQR$

$x + x = 108 \quad x = 54$

Example 2:

\overline{KM} bisects $\angle JKL$. Find the value of x .



$\angle JKM \cong \angle LKM$

$8x - 13 = 75$

$8x = 88$

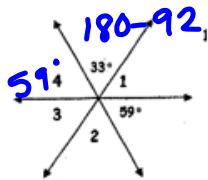
$x = 11$

Vertical Angles

Vertical angles are congruent.

Example 1:

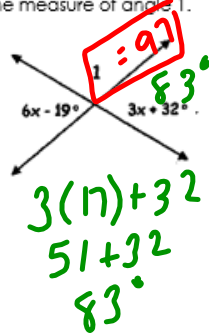
Find the measure of angles 1, 2, 3, and 4.



$$\begin{aligned}
 m\angle 1 &= 88^\circ \\
 m\angle 2 &= 33^\circ \\
 m\angle 3 &= 88^\circ \\
 m\angle 4 &= 59^\circ
 \end{aligned}$$

Example 2:

Solve for x. Then determine the measure of angle 1.



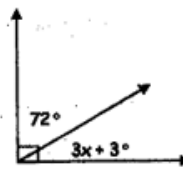
$$\begin{aligned}
 6x - 19 &= 3x + 32 \\
 -3x &\quad -3x \\
 \hline
 3x - 19 &= 32 \\
 +19 &\quad +19 \\
 \hline
 3x &= 51 \\
 \frac{3x}{3} &= \frac{51}{3} \\
 x &= 17
 \end{aligned}$$

Perpendicular

Two lines, rays, or segments that intersect to form a 90° angle.

Example 1:

Solve for x.



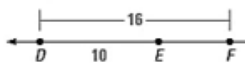
$$\begin{aligned}
 3x + 3 + 72 &= 90 \\
 3x + 75 &= 90 \\
 -75 &\quad -75 \\
 \hline
 3x &= 15 \\
 \boxed{x = 5}
 \end{aligned}$$

Segment Addition

If point B is on \overline{AC} , and between points A and C, then $\overline{AB} + \overline{BC} = \overline{AC}$.

Example 1:

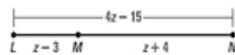
Use the diagram to find \overline{EF} .



$$\begin{aligned} \overline{DE} + \overline{EF} &= \overline{DF} \\ 10 + \overline{EF} &= 16 \\ \overline{EF} &= 6 \end{aligned}$$

Example 2:

Find the value of z.



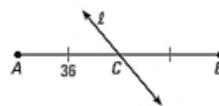
$$\begin{aligned} \overline{LM} + \overline{MN} &= \overline{LN} \\ z-3 + z+4 &= 4z-15 \\ 2z+1 &= 4z-15 \\ -2z & \quad -2z \\ \hline +1 &= 2z-15 \\ +15 & \quad +15 \\ \hline 16 &= 2z \\ \frac{16}{2} & \quad \frac{2z}{2} \\ \boxed{8} &= z \end{aligned}$$

Segment Bisector

A line, line segment, or ray that divides the line segment into two line segments of equal length.

Example 1:

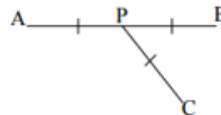
Find \overline{CB} and \overline{AB} .



$$\begin{aligned} \overline{CB} &= 36 \\ \overline{AB} &= 72 \end{aligned}$$

Example 2:

Determine if you have enough information to determine if \overline{PC} is the segment bisector of \overline{AB} . Explain why or why not.



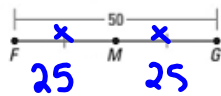
~~$\overline{AP} = \overline{PB} = \overline{PC}$~~
 Yes, \overline{PC} is the segm. bis. b/c $\overline{AP} \cong \overline{PB}$

Midpoint

Point that divides the segment into two congruent segments

Example 1:

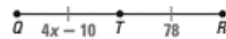
Find \overline{FM} and \overline{MG} .



$$\begin{aligned} x+x &= 50 \\ 2x &= 50 \\ x &= 25 \end{aligned}$$

Example 2:

T is the midpoint of \overline{QR} . Solve for x.



$$\begin{aligned} \overline{QT} &= \overline{TR} \\ 4x - 10 &= 78 \\ +10 & \quad +10 \\ \hline 4x &= 88 \\ \frac{4x}{4} &= \frac{88}{4} \end{aligned}$$

$x = 22$

Perpendicular Bisector

A line, line segment, or ray that intersects at the midpoint of a line segment at a 90 degree angle.

Example 1:

Determine if you have enough information to determine if \overline{WY} is the perpendicular bisector of \overline{ZX} . Explain why or why not.



Yes \overline{WY} is \perp bis. of \overline{ZX}
 b/c they intersect at 90°
 and v is the midpt
 of \overline{ZX} .

