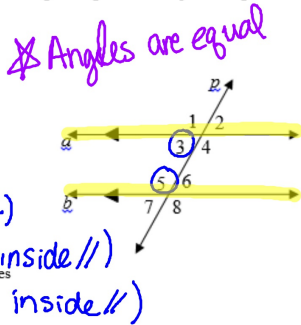


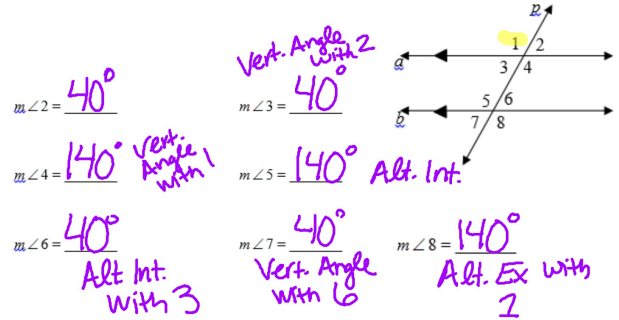
Parallel Lines cut by a Transversal

$a \parallel b$ and p is a transversal. Fill in the blanks describing the angle relationships with regard to $\angle 3$.

- $\angle 3$ and $\angle 4$ are a linear pair
- $\angle 3$ and $\angle 1$ are a linear pair
- $\angle 3$ and $\angle 2$ are vertical angles
- $\angle 3$ and $\angle 7$ are corresponding angles (Same spot)
- $\angle 3$ and $\angle 6$ are alternate interior angles (opposite sides inside //)
- $\angle 3$ and $\angle 5$ are consecutive interior angles (next # inside //)



$a \parallel b$ and p is a transversal. If $m\angle 1 = 140^\circ$, find the measure of each angle giving one reason for each answer.



Identify the type of angles and their relationship. Write the equation used to solve for x . Then, find the value of x . Put a box around your answer.

1.

type of angles: Congruent ✓
 relationship: Corresponding
 equation: $x + 80 = 5x$

$$\begin{array}{r} x + 80 = 5x \\ -x \quad -x \\ \hline 80 = 4x \\ \frac{80}{4} = \frac{4x}{4} \\ \boxed{x = 20} \end{array}$$

3.

type of angles: Congruent ✓
 relationship: Alternate Exterior
 equation: $2x + 10 = 86 + x$

$$\begin{array}{r} 2x + 10 = 86 + x \\ -x \quad -x \\ \hline x + 10 = 86 \\ -10 \quad -10 \\ \hline \boxed{x = 76} \end{array}$$

Find the values of x and y . Put a box around your answer.

9.

type of angles: Corresponding
 relationship: consecutive
 equation: $2y - 30 = y$

$$\begin{array}{r} 2y - 30 = y \\ -2y \quad -2y \\ \hline -30 = -y \\ \frac{-30}{-1} = \frac{-y}{-1} \\ \boxed{y = 30} \end{array}$$

10.

type of angles: consecutive
 relationship: Alternate Interior
 equation: $75 + 3y = 180$

$$\begin{array}{r} 75 + 3y = 180 \\ -75 \quad -75 \\ \hline 3y = 105 \\ \frac{3y}{3} = \frac{105}{3} \\ \boxed{y = 35} \end{array}$$

11. Use the diagram of the picnic table to answer the questions.

$$m\angle 1 = 115^\circ$$

Vertical
Angles

$$m\angle 2 = 115^\circ$$

Corresp.

$$m\angle 3 = 65^\circ$$

Supp.

$$\begin{array}{r} 180 \\ -115 \\ \hline 65 \end{array}$$

