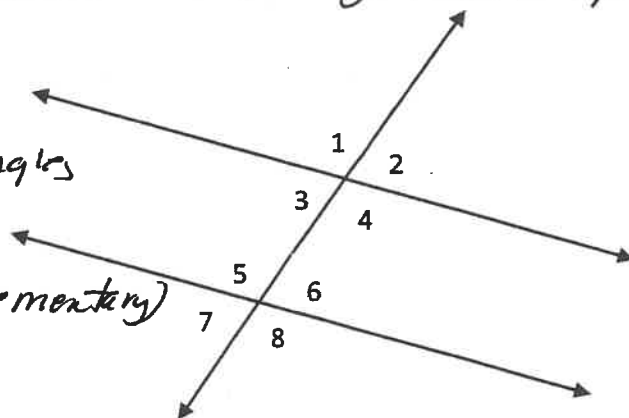


- The sum of the measures of the angles of a triangle is 180° .
- The exterior angle of a triangle is equal to the sum of the two remote interior angles of the triangle.
- An angle bisector cuts an angle into two equal angles.
- Isosceles Triangles have 2 congruent sides and 2 congruent angles.
- Equilateral Triangles have 3 congruent sides and 3 congruent angles.

6. Give the name of each angle pair.

- $\angle 3$ and $\angle 5$ same side interior
- $\angle 1$ and $\angle 7$ same side exterior angles
- $\angle 4$ and $\angle 8$ corresponding
- $\angle 8$ and $\angle 6$ linear pair (supplementary)
- $\angle 4$ and $\angle 1$ vertical angles

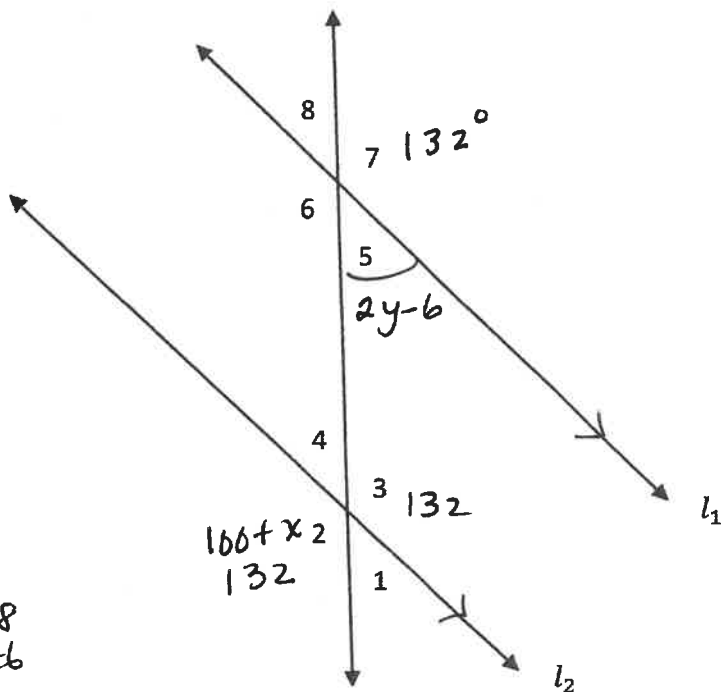


7. Given: $l_1 \parallel l_2$ and $m\angle 7 = 132^\circ$, $m\angle 2 = 100 + x$, $m\angle 5 = 2y - 6$. Find the measure of each of the remaining angles and the values of all variables.

- $m\angle 1 = \underline{48}$
 $m\angle 2 = \underline{132}$
 $m\angle 3 = \underline{132}$
 $m\angle 4 = \underline{48^\circ}$
 $m\angle 5 = \underline{48^\circ}$
 $m\angle 6 = \underline{132^\circ}$
 $m\angle 7 = \underline{132^\circ}$
 $m\angle 8 = \underline{48^\circ}$
 $x = \underline{32^\circ}$
 $y = \underline{27^\circ}$

$$\begin{array}{r} 180 \\ -132 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 2y - 6 = 48 \\ +6 \quad +6 \\ \hline 2y = 54 \\ y = 27 \end{array}$$



$$m\angle 2 = 132$$

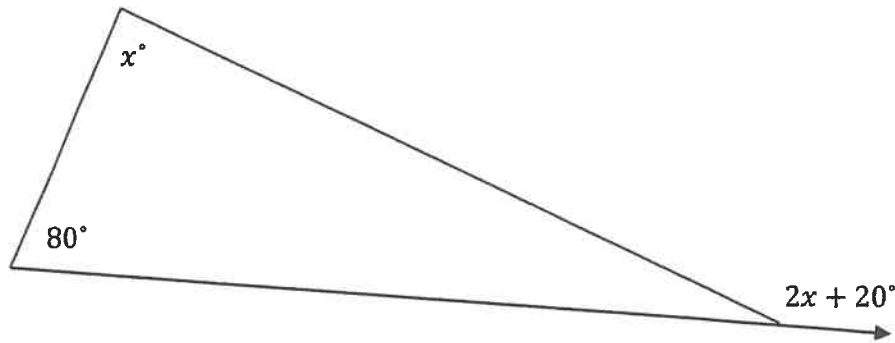
$$\begin{array}{r} 100 + x = 132 \\ -100 \quad -100 \\ \hline x = 32 \end{array}$$

$$x = 32$$

8. Exterior angle theorem:

The exterior angle of a triangle is equal to the sum of the two remote interior angles.

Problem:



Relationship:

$$\begin{array}{l} \text{ext} \\ 2x + 20 \end{array} = \text{remote} + \text{remote}$$

Equation:

$$\begin{array}{r} x + 80 = 2x + 20 \\ -x \qquad -x \\ \hline 80 = x + 20 \\ -20 \qquad -20 \\ \hline \end{array}$$

Value of x:

$$\boxed{x = 60}$$

Check:

$$60 + 80 = 2(60) + 20$$

$$140 = 120 + 20$$

$$140 = 140 \checkmark$$