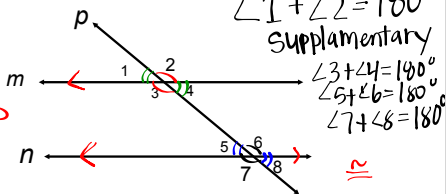


Math II Unit 3.1 Parallel Lines, Transversals and Triangles

1. Pass out the parallel line and transversal TASK.

2. Discuss findings about parallel lines and transversals.

angles around pt m are the same as around pt p
 $\angle 1 \cong \angle 4$



3. Vocabulary:

a) Alternate interior angles -

$$\angle 3 \cong \angle 6 \quad \angle 4 \cong \angle 5$$

b) Alternate exterior angles -

$$\angle 1 \cong \angle 7 \quad \angle 2 \cong \angle 8$$

c) Vertical angles -

$$\angle 3 \cong \angle 2 \quad \angle 8 \cong \angle 6 \quad \angle 4 \cong \angle 1 \quad \angle 7 \cong \angle 5$$

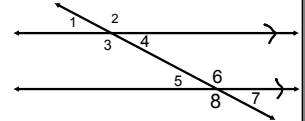
d) Consecutive interior angles -

e) Corresponding angles -

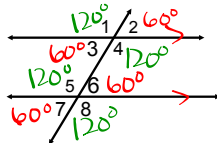
$$\angle 2 \cong \angle 6 \quad \angle 1 \cong \angle 5 \quad \angle 4 \cong \angle 7 \quad \angle 3 \cong \angle 4$$

f) Linear pair -

every angle pair that forms a line

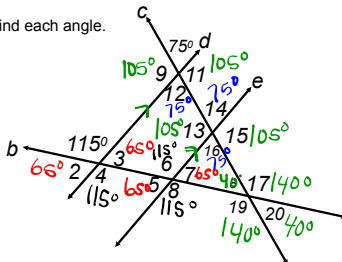


4. Find the measure of each missing angle if $m\angle 2 = 60^\circ$



$$180 - 65 - 75 = 40^\circ$$

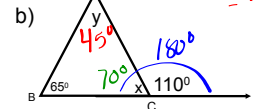
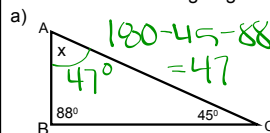
5. Find each angle.



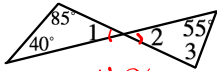
6. TASK: Construct any triangle and measure each angle. Construct a different triangle and measure each angle.

a) The sum of the measures of the interior angles of a triangle = 180°

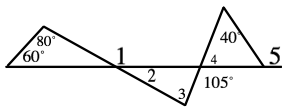
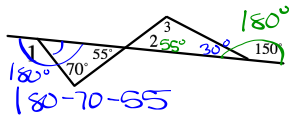
7. Find each missing angle.



8. Find each missing angle.



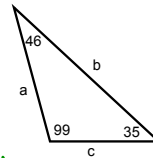
$\angle 1 \cong \angle 2$ Vertical angles



Side/Angle Relationships:

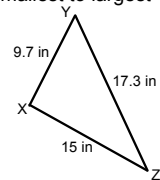
The largest angle is always opposite the longest side. The smallest angle is always opposite the shortest side.

List the sides in order, smallest to largest



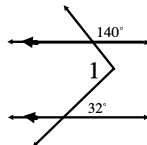
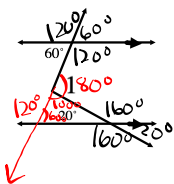
$b = \text{biggest}$
 $c = \text{middle}$
 $a = \text{smallest}$

List the angles in order, smallest to largest



$X = \text{biggest}$
 $Y = \text{middle}$
 $Z = \text{smallest}$

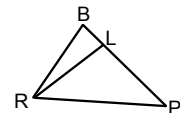
9. Find $m\angle 1$



10. Isosceles Triangles -

In the figure, $\overline{PL} \cong \overline{RL}$

and $\overline{LR} \cong \overline{BR}$



If $m\angle RLP = 100$, find $m\angle BRL$

If $m\angle LPR = 34$, find $m\angle B$

Isosceles Triangle:

At least 2 sides (called the *legs*) of the triangles are congruent.

Base angle theorem: The base angles of an isosceles triangle are congruent.

