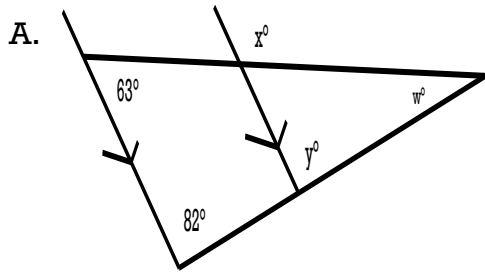
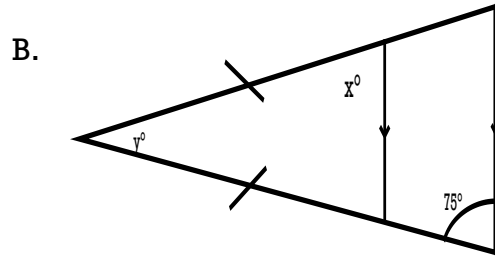


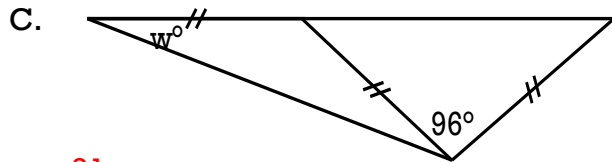
1. Find each missing angle measure. *Provide justification!*



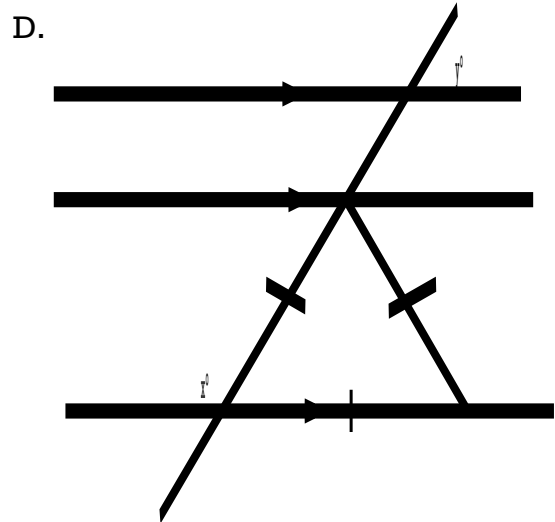
$x = 117$   $y = 82$   $w = 35$



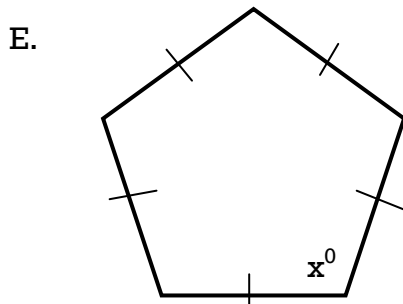
$x = 75$   $y = 30$



$w = 21$



$x = 120$   $y = 60$



$x = 108$

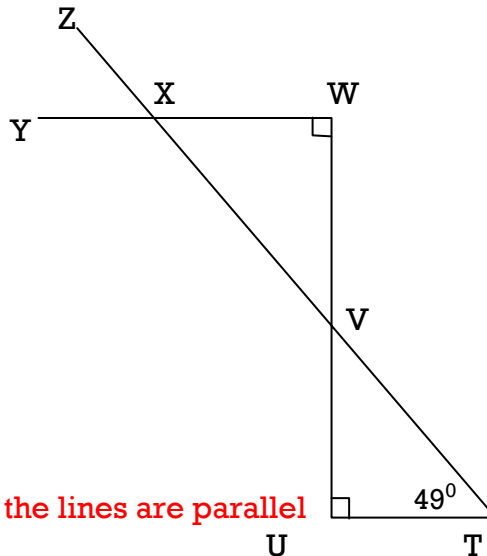
2. Determine the missing angles in the diagram below. No need to justify.

A).  $\angle WVX = 41^\circ$

B).  $\angle YXV = 131^\circ$

C). Explain, whether or not,  $\overline{YW} \parallel \overline{UT}$ .  
Use support from the diagram to help you.

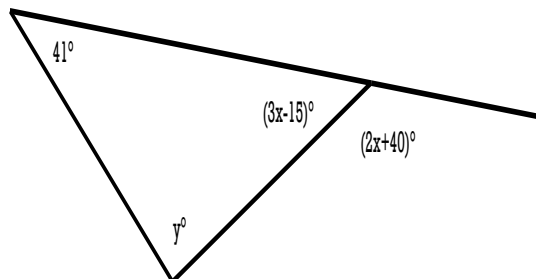
$\angle W = \angle U$  are corresponding angles so the lines are parallel



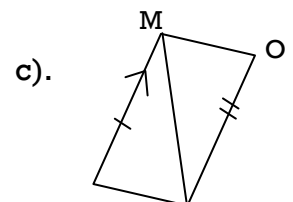
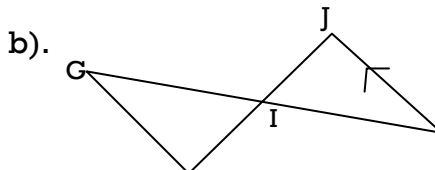
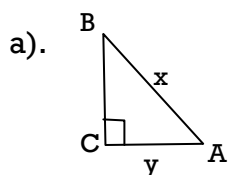
3. What is the sum of the angles in a 9-sided polygon?  $1260^\circ$

4. Solve for x and y.

$x = 31^\circ$   
 $y = 61^\circ$

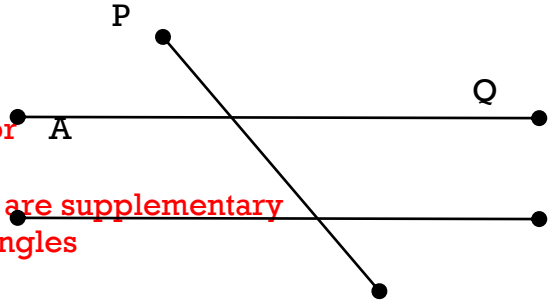


5. For each of the following, determine whether you can conclude that two triangles are congruent. If so, state the reason. If not, state what extra piece of information would allow you to conclude that the two triangles are congruent. **OMIT**



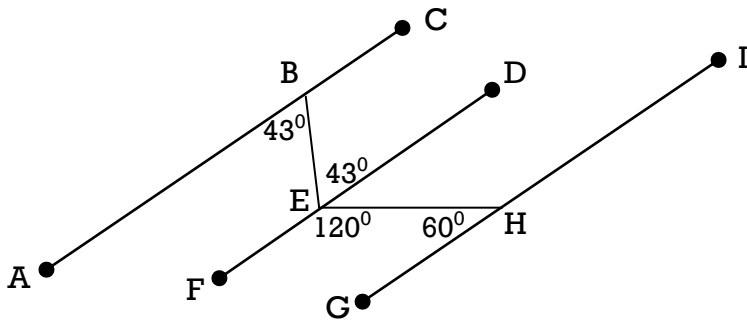
6. State whether each pair of angles measures can be used to prove that  $\overline{AB} \parallel \overline{CD}$ . State how you know.

- a).  $\angle PQA = 57^\circ$  and  $\angle DRS = 57^\circ$  **yes alternate exterior**
- b).  $\angle AQR = 123^\circ$  and  $\angle QRD = 123^\circ$  **yes alternate interior**
- c).  $\angle QRC = 57^\circ$  and  $\angle DRS = 57^\circ$  **no vertically opposite**
- d).  $\angle BQR = 57^\circ$  and  $\angle QRD = 123^\circ$  **yes same side interior are supplementary**
- e).  $\angle PQA = 57^\circ$  and  $\angle QRC = 57^\circ$  **yes alternate interior angles**



7. Set up a two-column proof for each of the following.

a). Prove that  $\overline{AC} \parallel \overline{GI}$ .



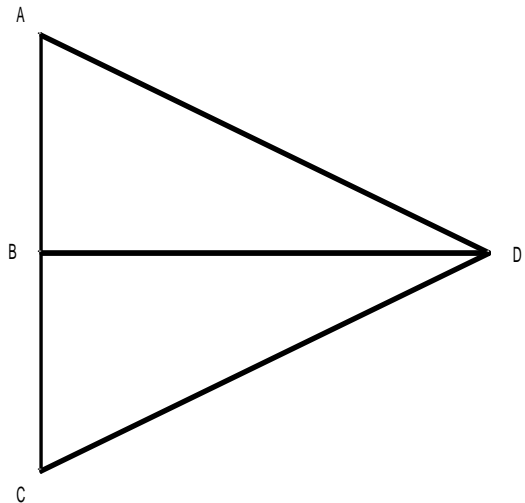
Statement	Reason
$\angle 1 = \angle 2$	alternate interior
$AC \parallel FD$	since alternate interior angles are equal
$\angle 3 = 120^\circ$	supplementary angles
$\angle 3 = \angle 4$	alternate interior angles
$FD \parallel GI$	since alternate interior angles are equal
$AC \parallel GI$	transitive property

b). Given: **OMIT**

$\triangle ADC$  is Isosceles  
 B is the midpoint of AC

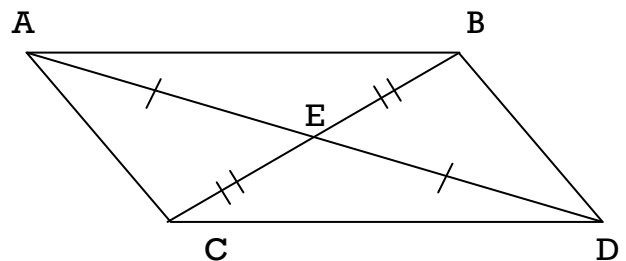
Prove:

$\triangle ABD \cong \triangle CBD$   
 $\angle ADB = \angle CDB$



8. On a test Jeremy was asked to use a two column proof to prove that  $\overline{AB} \parallel \overline{DC}$ . Identify and correct any errors in his proof.

**OMIT**



Statement	Reason
$\overline{AE} = \overline{DE}$ and $\overline{CE} = \overline{BE}$	Given
$\angle AEB = \angle DEC$	Supplementary Angles
$\triangle AEB = \triangle DEC$	ASA
$\angle EAB = \angle EDC$	CPCTC
$\angle EAB = \angle EDC$	Alternate interior angles are equal.
$\overline{AB} \parallel \overline{DC}$ .	If alternate interior angles are equal the lines are parallel.

9. Solve for  $x$ .  $x = 9.75$

