

Unit 5 Review: Triangles

5.1 Angles of Triangles

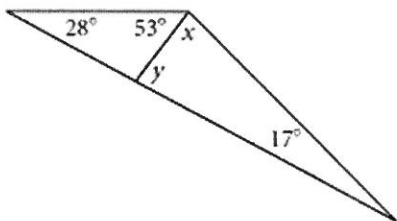
1) Can you construct the following triangles? If so, sketch an example.

- a. Right Equilateral b. Isosceles Right c. Equilateral Acute Equiangular d. Obtuse Scalene

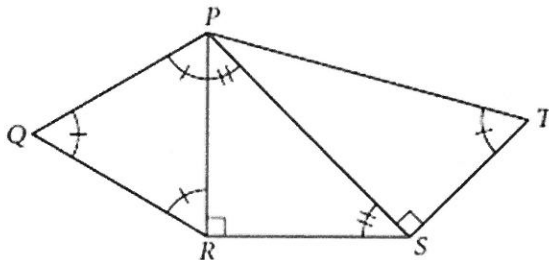
- e. Equilateral Obtuse f. Acute Right g. Isosceles Equilateral i. Right Scalene

2) Find x and y .

$x = \underline{\hspace{2cm}}$, $y = \underline{\hspace{2cm}}$

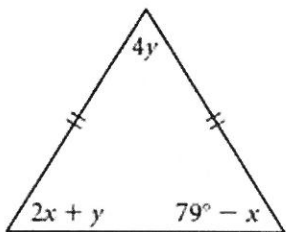


3) Find the measure of $\angle QPT$.



4) Find x and y (Hint: Set up a system of equations)

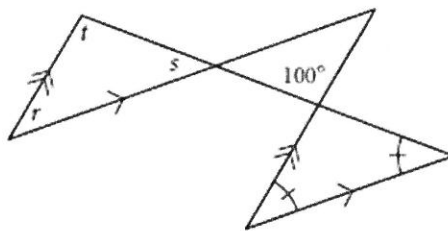
$x = \underline{\hspace{2cm}}$, $y = \underline{\hspace{2cm}}$



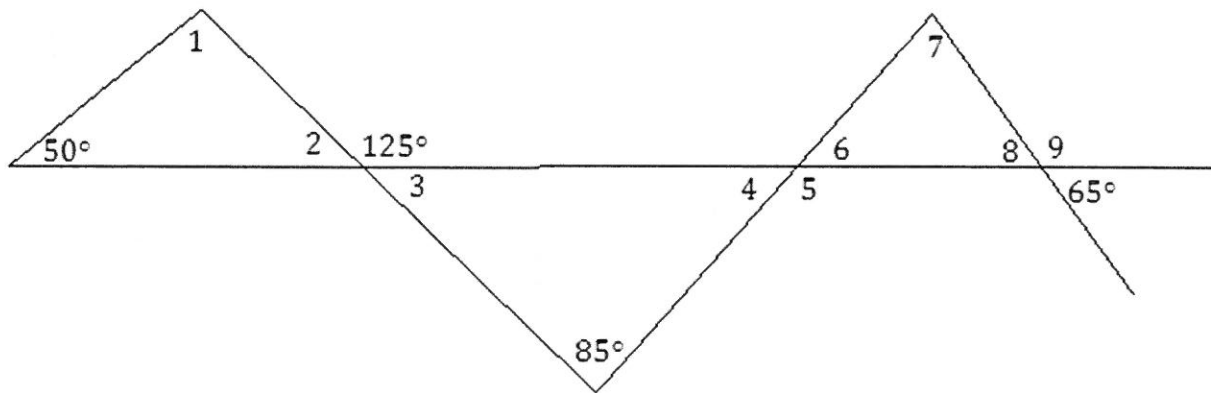
5) Find r , s , t .

$r = \underline{\hspace{2cm}}$, $s = \underline{\hspace{2cm}}$,

$t = \underline{\hspace{2cm}}$



6)

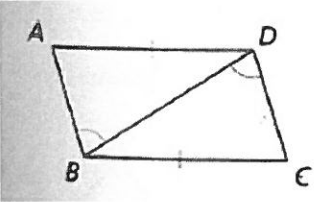


7) $\triangle GEO \cong \triangle TRI$, $\angle G = 10x + 3y$, $\angle O = 55^\circ$, $\angle R = 5x + 8y$. Find x and y .

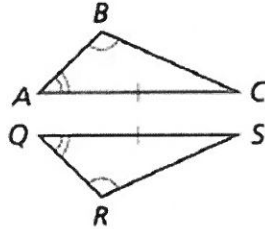
8) $\triangle PAC \cong \triangle BIG$, $\angle G = 8x + 3y$, $\angle A = 56^\circ$, $\angle B = 54^\circ$, $\angle I = 5x + 8y$. Find x and y .

9) Decide if the triangles are congruent. If so, provide the shortcut that proves they are congruent. Then, write a congruence statement.

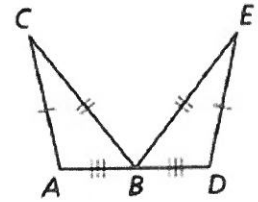
$\triangle ABD$ and $\triangle CDB$



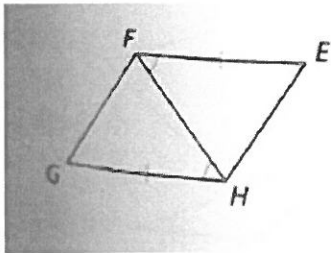
$\triangle ABC$, $\triangle QRS$



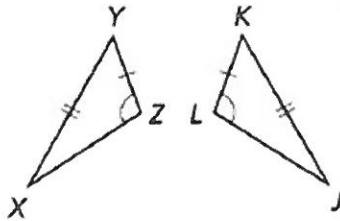
$\triangle ABC$, $\triangle DBE$



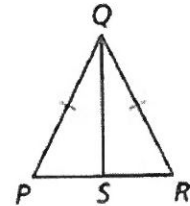
$\triangle EFH$ and $\triangle GHF$



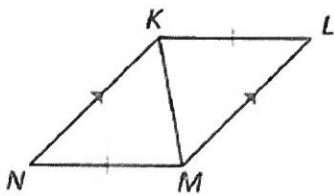
$\triangle XYZ$, $\triangle JKL$



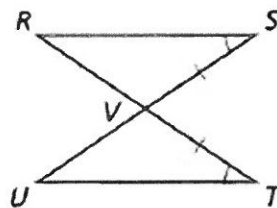
$\triangle PQS$, $\triangle RQS$



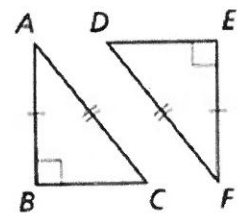
$\triangle KLM$ and $\triangle MNK$



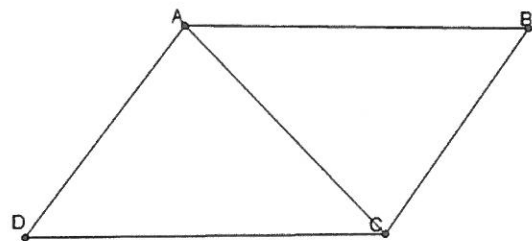
$\triangle RSV$, $\triangle UTV$



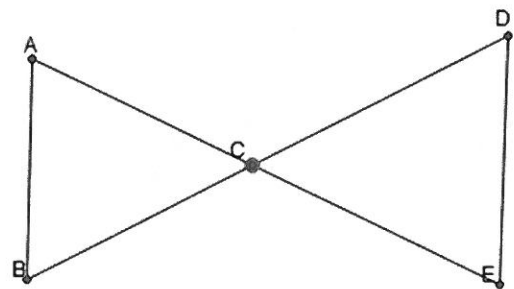
$\triangle ABC$, $\triangle FED$

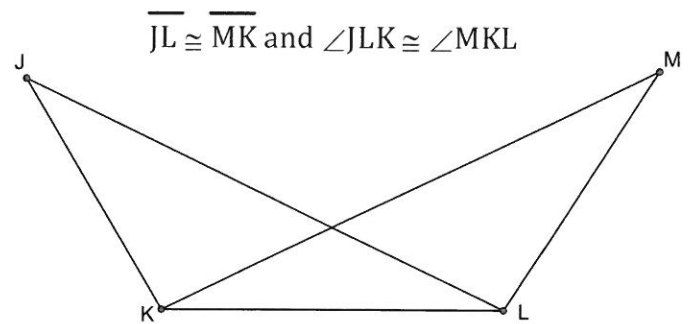
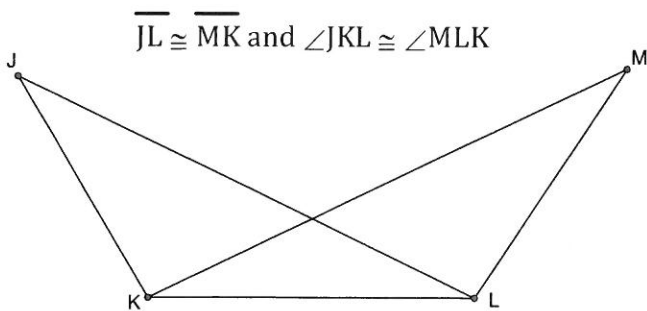
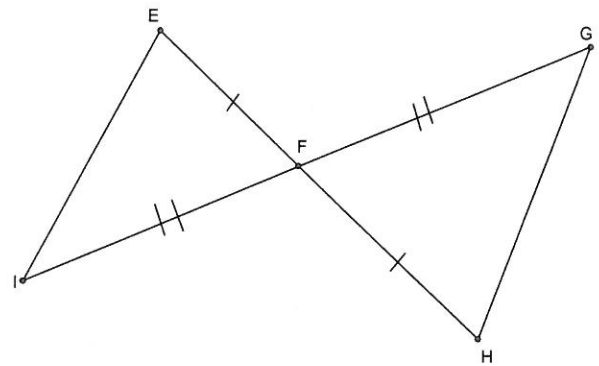
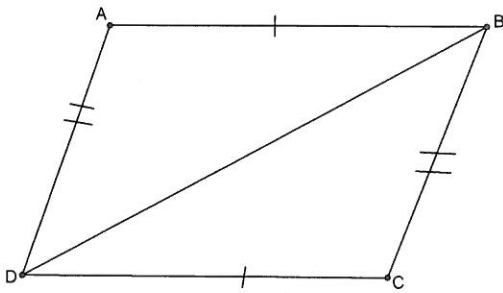
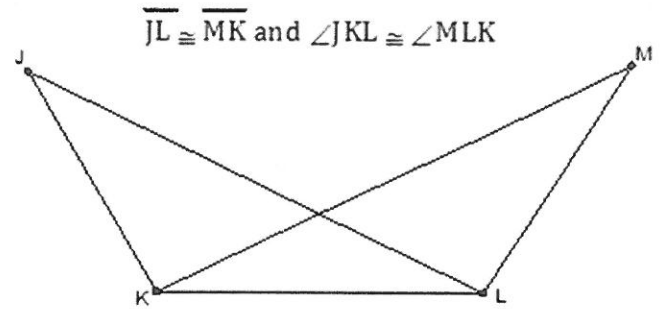
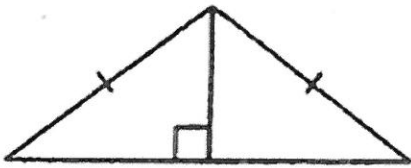
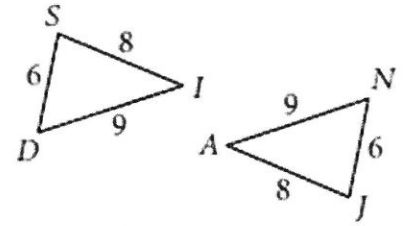
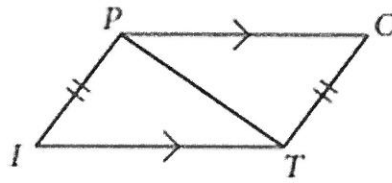
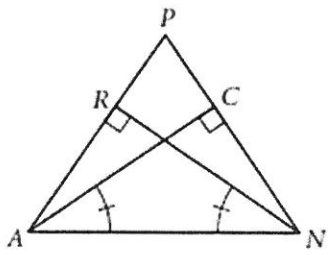


Given: $AB \parallel DC$ and $AB = DC$



C is the midpoint of \overline{AE} and \overline{DB}

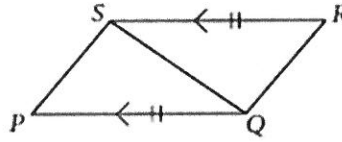




10) On a separate piece of paper, prove the following.

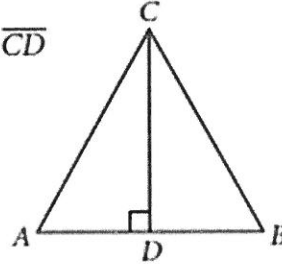
Given: $\overline{PQ} \parallel \overline{SR}$ and $\overline{PQ} \cong \overline{SR}$

Show: $\overline{SP} \cong \overline{QR}$



Given: Isosceles $\triangle ABC$ with $\overline{AC} \cong \overline{BC}$ and altitude \overline{CD}

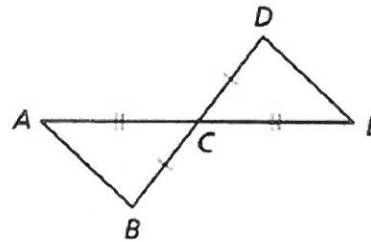
Show: \overline{CD} is a median



11) Write a two-column proof.

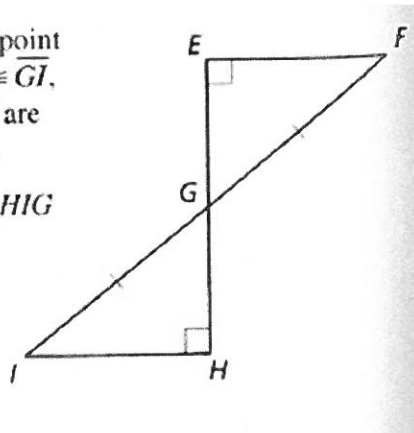
Given: C is the midpoint of \overline{AE} and \overline{BD} .

Prove: $\triangle ABC \cong \triangle EDC$



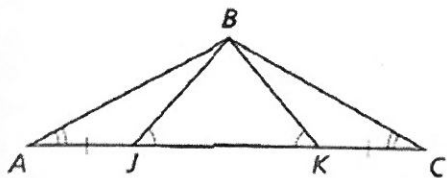
12) **Given** G is the midpoint of \overline{EH} , $\overline{FG} \cong \overline{GI}$, $\angle E$ and $\angle H$ are right angles.

Prove $\triangle EFG \cong \triangle HIG$



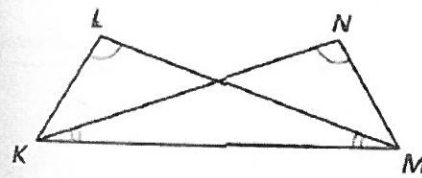
13) **Given** $\overline{AJ} \cong \overline{KC}$, $\angle BJK \cong \angle BKJ$, $\angle A \cong \angle C$

Prove $\triangle ABK \cong \triangle CBJ$



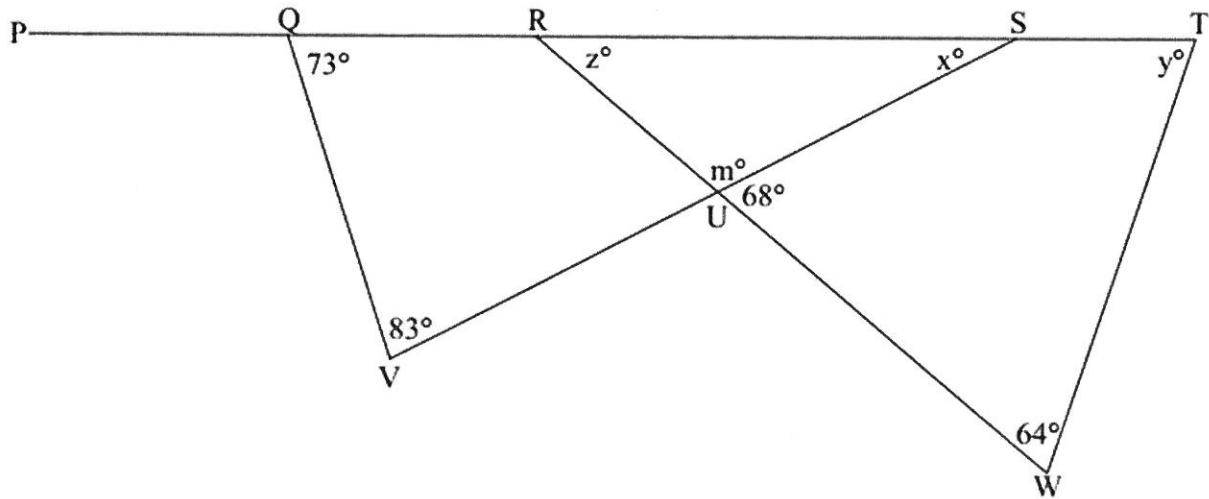
Given $\angle NKM \cong \angle LMK$, $\angle L \cong \angle N$

Prove $\triangle NMK \cong \triangle LKM$



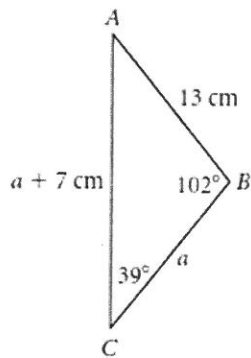
14)

Example 3: Determine the measures of all unknown angles in the figure below:

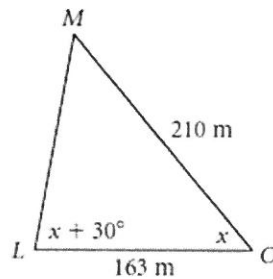


15) In Exercises 4–6, find the measures.

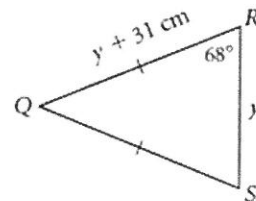
4. $m\angle A = \underline{\hspace{2cm}}$, perimeter of $\triangle ABC = \underline{\hspace{2cm}}$



5. The perimeter of $\triangle LMO$ is 536 m. $LM = \underline{\hspace{2cm}}$, $m\angle M = \underline{\hspace{2cm}}$



6. The perimeter of $\triangle QRS$ is 344 cm. $m\angle Q = \underline{\hspace{2cm}}$, $QR = \underline{\hspace{2cm}}$



16)

$$\overline{XK} \cong \overline{PK}$$

$$\overline{ZK} \cong \overline{BK}$$

Given:

$$\angle OXP \cong \angle OPX$$

Prove:

$$\overline{ZO} \cong \overline{OB}$$

