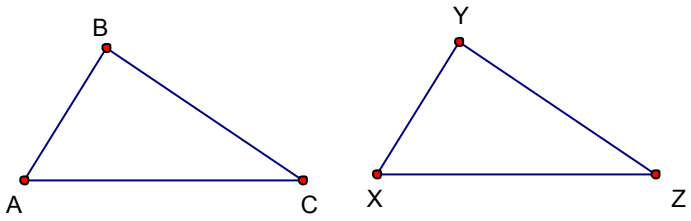
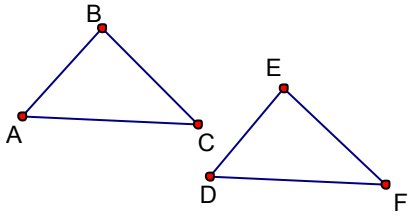
4-4 Congruent Triangles

Congruent figures: When two figures are congruent their corresponding angles and corresponding sides are congruent.

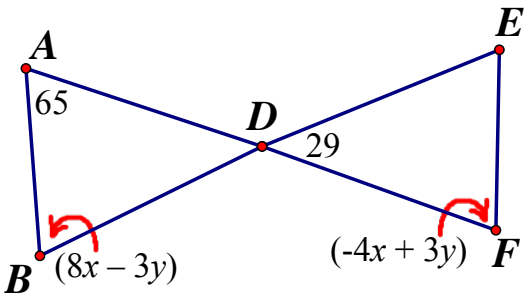
In the figures below $\triangle ABC \cong \triangle XYZ$ which is read, "Triangle *ABC* is congruent to triangle *XYZ*." The order in which the triangle is named is important; the corresponding parts (angles and sides) must match up.



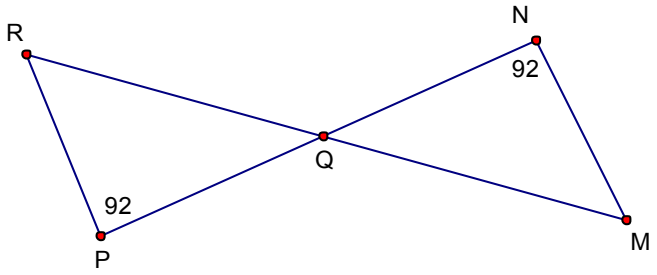
1) Identify the congruent corresponding parts in the triangles above.

Recall: Third Angles Theorem	
If two angles of one triangle are congruent to two angles of another triangle, then the third angles are also congruent.	 If $\angle A \cong \angle D$ and $\angle B \cong \angle E$, then $\angle C \cong \angle F$.

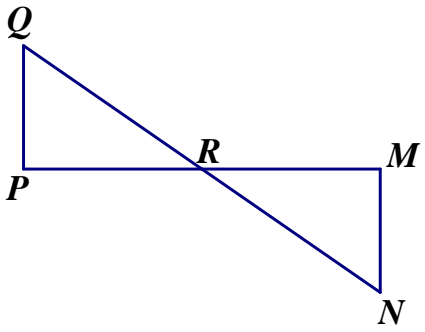
2) Given that $\triangle ABD \cong \triangle FED$, solve for x and y.



3) Determine whether the triangles are congruent. Given Q is the midpoint of both $\overline{RM}$ and $\overline{PN}$, and $\overline{RP} \cong \overline{NM}$. Justify your reasoning.



4) **Given:** $\angle P$ and $\angle M$ are right angles
R is the midpoint of $\overline{PM}$
$\overline{MN} \cong \overline{PQ}$, $\overline{QR} \cong \overline{NR}$
Prove: $\triangle PQR \cong \triangle MNR$



5) **Given:** $\overline{MN} \cong \overline{QP}$, $\overline{MN} \parallel \overline{QP}$,

O is the midpoint of $\overline{MQ}$ and $\overline{PN}$

Prove: $\triangle MNO \cong \triangle QPO$