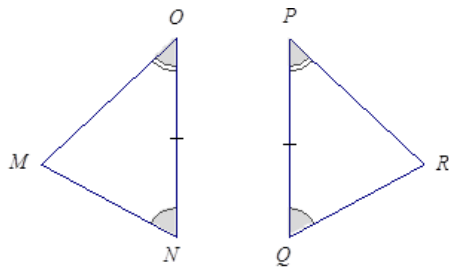# Are They Congruent?

NAME_____

Problem Set

In each of the following four problems, two triangles are given. State whether the triangles are *congruent*, *not congruent*, or *not necessarily congruent*. If the triangles are identical, give the triangle conditions that explain why, and write a triangle correspondence that matches the sides and angles. If the triangles are not identical, explain why. If it is not possible to definitively determine whether the triangles are identical, write "the triangles are not necessarily identical," and explain your reasoning.

1.   **Congruent**   **Not Congruent**   **Not Necessarily Congruent**

2.   **Congruent**   **Not Congruent**   **Not Necessarily Congruent**

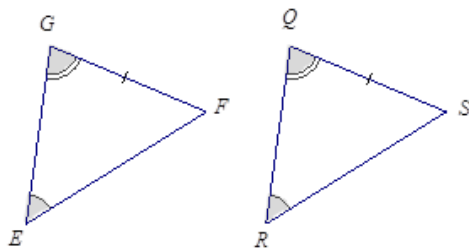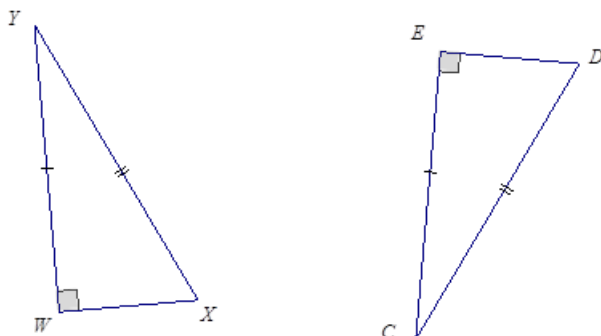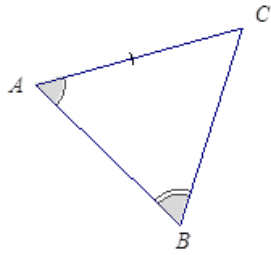3.   **Congruent**   **Not Congruent**   **Not Necessarily Congruent**
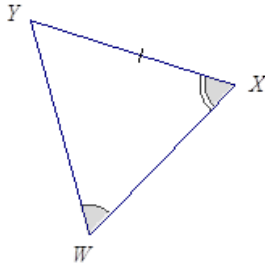
4.   **Congruent   Not Congruent   Not Necessarily Congruent**

For Problems 5–8, three pieces of information are given for $\triangle ABC$ and YZX. Draw, freehand, the two triangles (do not worry about scale), and mark the given information. If the triangles are congruent, give a triangle correspondence that matches equal angles and equal sides. Explain your reasoning.

5. AB=YZ, BC=ZX, AC=YX

6. AB=YZ, BC=ZX, $\angle C = \angle Y$

7. AB=XZ, A=$\angle Z$, $\angle C = \angle Y$

8. AB=XY, AC=YZ, $\angle C = \angle Z$
(Note that both angles are obtuse.)