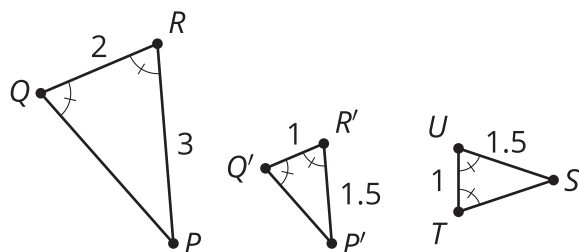


Unit 3 Lesson 9: Conditions for Triangle Similarity

1 Math Talk: Angle-Side-Angle As A Helpful Tool (Warm up)

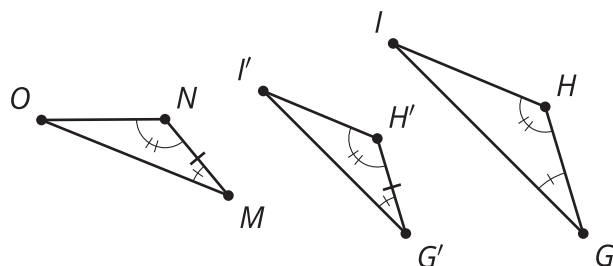
Student Task Statement

How could you justify each statement?



Triangle $P'Q'R'$ is congruent to triangle STU .

Triangle PQR is similar to triangle STU .



Triangle $G'H'I'$ is congruent to triangle MNO .

Triangle GHI is similar to triangle MNO .

2 How Many Pieces?

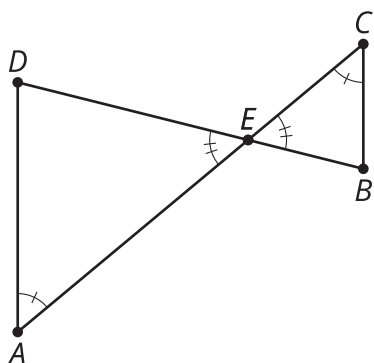
Student Task Statement

For each problem, draw 2 triangles that have the listed properties. Try to make them as different as possible.

1. One angle is 45 degrees.
2. One angle is 45 degrees and another angle is 30 degrees.
3. One angle is 45 degrees and another angle is 30 degrees. The lengths of a pair of corresponding sides are 2 cm and 6 cm.
4. Compare your triangles with your neighbors' triangles. Which ones seem to be similar no matter what?
5. Prove your conjecture.

Activity Synthesis

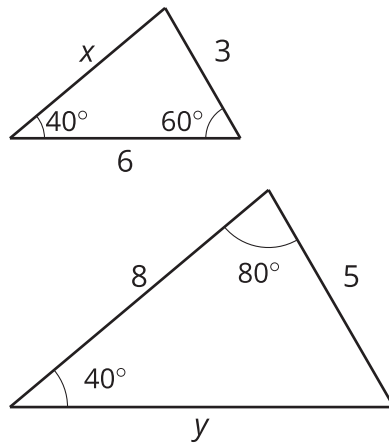
$\angle A \cong \angle C$, $\angle DEA \cong \angle BEC$, so $\triangle DEA \sim \triangle BEC$



3 Any Two Angles?

Student Task Statement

Here are 2 triangles. One triangle has a 60 degree angle and a 40 degree angle. The other triangle has a 40 degree angle and an 80 degree angle.



1. Explain how you know the triangles are similar.
2. How long are the sides labeled x and y ?