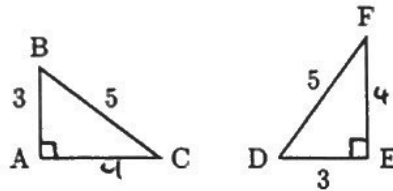


MA 202: Quiz 7
Tuesday 03/27/2018

Answer Key

1. Determine whether the triangles below are congruent and give a careful argument for why your answer is correct.



We can use the Pythagorean Theorem to find AC and EF:

$$(AC)^2 + 3^2 = 5^2, \text{ so } (AC)^2 = 25 - 9 = 16, \text{ so } (AC) = 4$$

Similarly $EF = 4$.

So $AB \cong ED$, $BC \cong DF$, and $AC \cong EF$. Thus $\triangle ABC \cong \triangle DEF$ by the SSS congruence theorem.

2. Suppose that $\triangle ABC \sim \triangle FED$. If we also have $\triangle XYZ \sim \triangle FED$, is $\triangle XYZ \sim \triangle ABC$? Why or why not?

1) Yes. We know $\triangle ABC$ is proportional to $\triangle FED$ and $\triangle XYZ$ is also proportional to $\triangle FED$, so $\triangle ABC$ and $\triangle XYZ$ must be proportional to each other. So $\triangle ABC \sim \triangle XYZ$.

2) Yes. We know $\angle A \cong \angle F \cong \angle Z$ and $\angle B \cong \angle E \cong \angle Y$, so by AA similarity, $\triangle ABC \sim \triangle XYZ$.