

Proving Triangles Similar

- I can prove whether or not two triangles are similar.

Similarity Postulates and Theorems

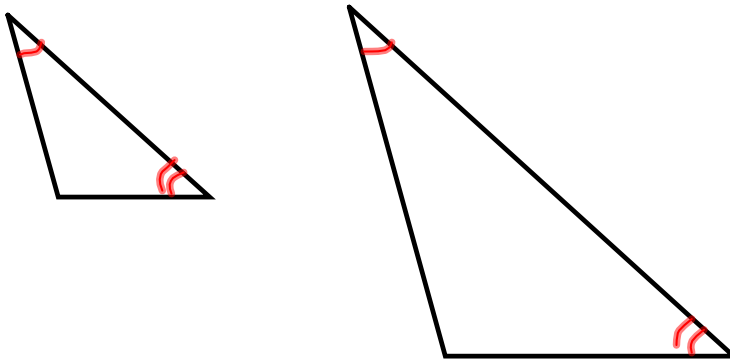
1. Angle-Angle (AA) Similarity Postulate - If two angles of one triangle are congruent to two angles of another, then the triangles must be similar.

2. Side-Side-Side (SSS) Similarity Theorem - If the lengths of the corresponding sides of two triangles are proportional, then the triangles must be similar. (This is like SSS congruency)

3. Side-Angle-Side (SAS) Similarity Theorem - If an angle of one triangle is congruent to an angle of a second triangle and the lengths of the sides including these angles are proportional, then the triangles must be similar. (This is like SAS congruency)

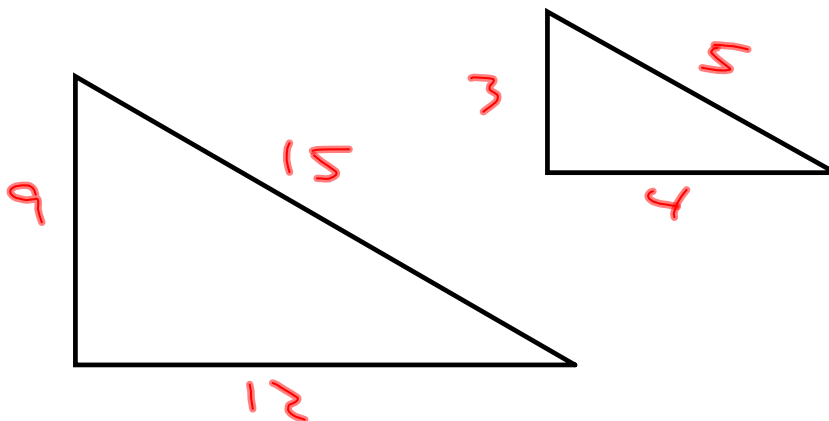
AA Similarity Postulate

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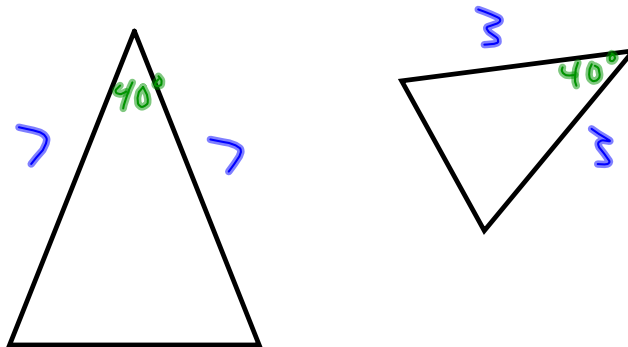
SSS Similarity Theorem

2. Side-Side-Side (SSS) Similarity Theorem - If the lengths of the corresponding sides of two triangles are proportional, then the triangles must be similar.

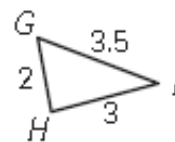
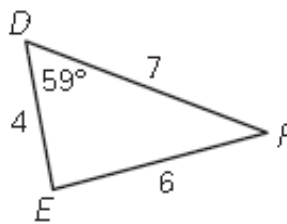
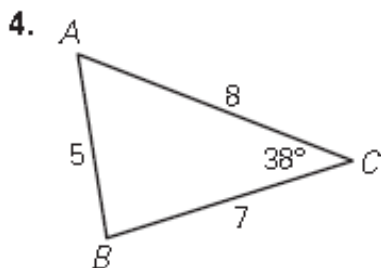


SAS Similarity Theorem

3. Side-Angle-Side (SAS) Similarity Theorem - If an angle of one triangle is congruent to an angle of a second triangle and the lengths of the sides including these angles are proportional, then the triangles must be similar.



Determine which two of the three given triangles are similar. Find the scale factor for the pair.



Examples: (Finding Distance Indirectly)



Example 2:

Backyard Basketball

You want to put up a basketball hoop in your backyard. Regulation height for the basketball hoop is 10 feet or 120 inches. After a couple of attempts at guessing the correct height and checking, you decide to use shadows to estimate the height. You are 68 inches tall, and your shadow is 62 inches long. You are standing 41 inches from the pole and the tip of your shadow coincides with the tip of the basketball hoop's shadow as shown in the diagram below.

