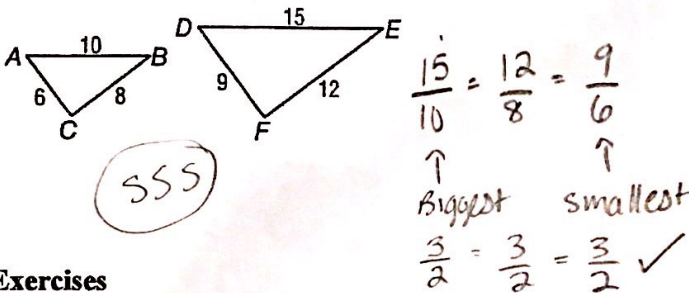


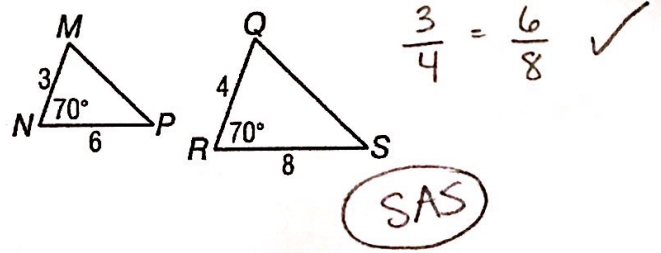
Identify Similar Triangles – There are three ways to show that two triangles are similar.

AA	Two angles of one triangle are congruent to two angles of another triangle.
SSS	The measures of the 3 corresponding side lengths of two triangles are proportional.
SAS	The measures of two side lengths of one triangle are proportional to the measures of two corresponding side lengths of another triangle, and the included angles are congruent.

Example 1: Determine whether the triangles are similar.

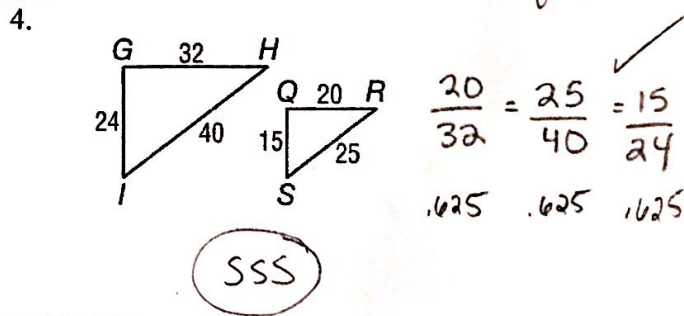
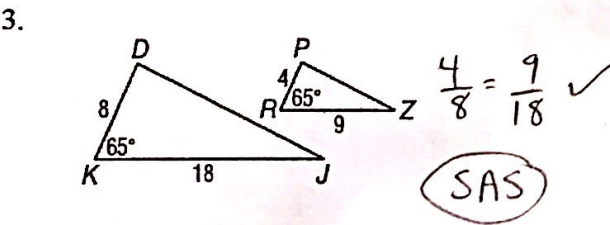
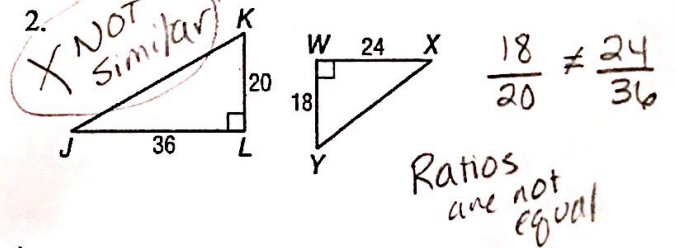
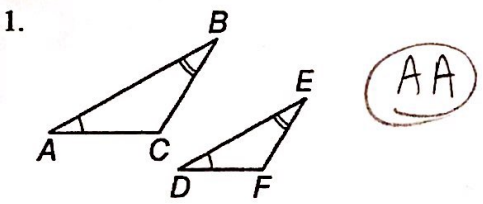


Example 2: Determine whether the triangles are similar.



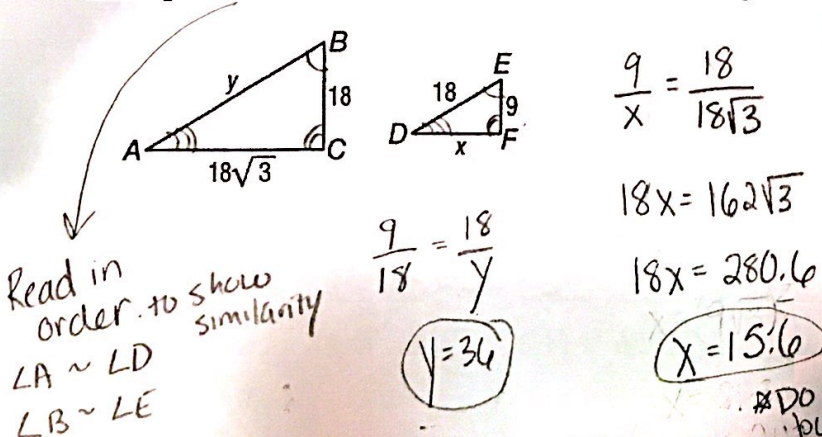
Exercises

Determine whether the triangles are similar. If so, write a similarity statement. Explain your reasoning.

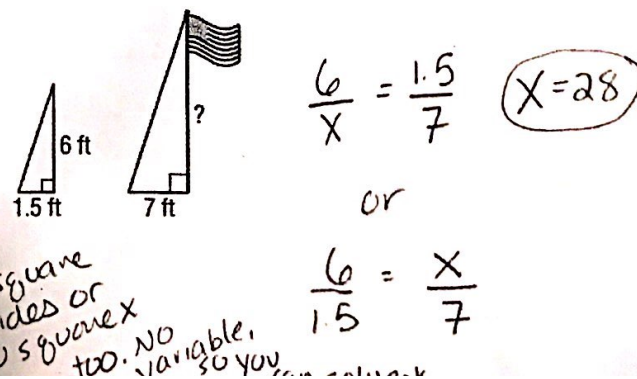


Use Similar Triangles Similar triangles can be used to find measurements.

Example 1: $\triangle ABC \sim \triangle DEF$. Find the values of x and y .



Example 2: A person 6 feet tall casts a 1.5-foot-long shadow at the same time that a flagpole casts a 7-foot-long shadow. How tall is the flagpole?

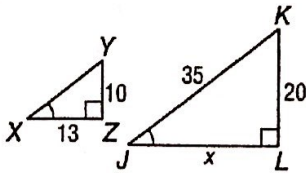


Exercises

Identify the similar triangles. Then find each measure.

o. say why

1. JL

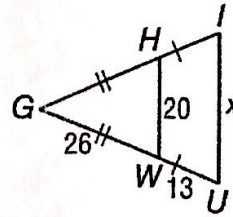


$\Delta XYZ \sim \Delta JKL$

AA
 $x = 26$

$\frac{20}{10} = \frac{x}{13}$

2. IU

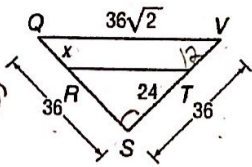


$\Delta HGW \sim \Delta IGU$

$x = 30$
 SAS

3. QR

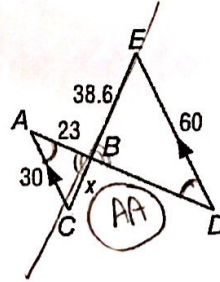
$x = 12$



$\Delta QVS \sim \Delta RTS$

SAS

4. BC



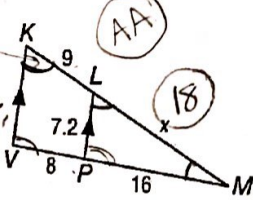
$\Delta BAC \sim \Delta BDE$

$x = 19.3$

$\frac{30}{60} = \frac{x}{38.6}$

5. LM

small section is not a triangle, need to look at full Δ !



$\Delta KVM \sim \Delta LMP$

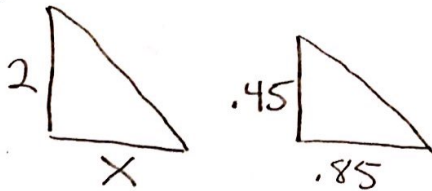
$\frac{x}{x+9} = \frac{16}{24}$

$24x = 16x + 144$

7. The heights of two vertical posts are 2 meters and 0.45 meter. When the shorter post casts a shadow that is 0.85 meter long, what is the length of the longer post's shadow to the nearest hundredth?

$8x = 144$

$x = 18$



$\frac{x}{2} = \frac{.85}{.45}$

$1.7 = .45x$

$36x + 960 = 1280$
 $36x = 320$
 $x = 10.6$

$x = 3.78$