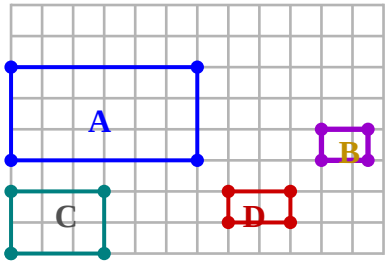
Section 4.3

Triangles are **similar** if **at least one** of the following conditions holds true:

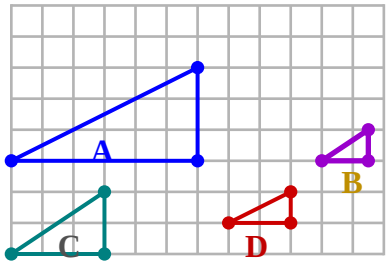
- Corresponding angles are equal
- Corresponding side lengths are proportional

Warm-up 1: Which of the following shapes are similar? Determine the scale factor for the similar shapes.

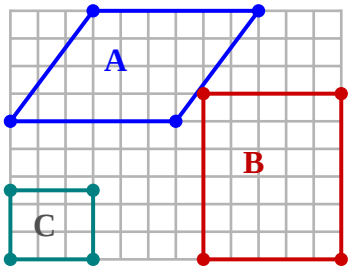
a)



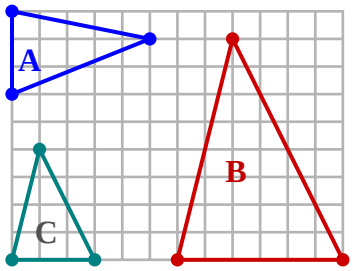
b)



c)

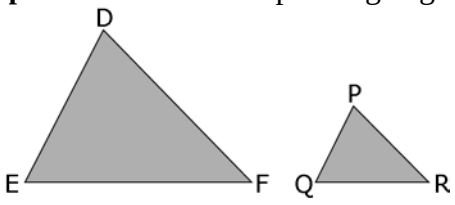


d)

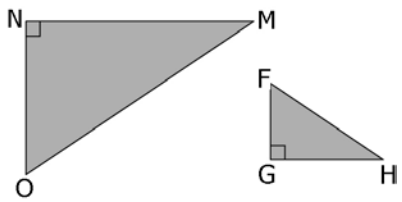


Warm-up 2: List the corresponding angles and the corresponding sides in each pair of similar triangles.

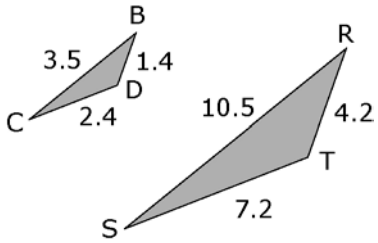
a)



b)

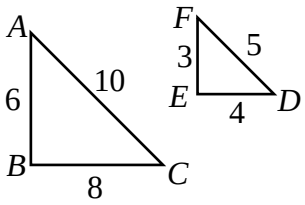


Warm-up 3: Are the triangles similar? Show how you know, then write a similarity statement.

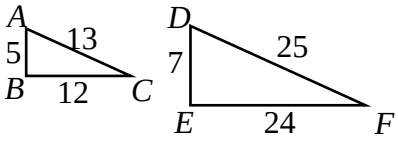


Example 1: Determine if the following triangles are similar. Show how you know.

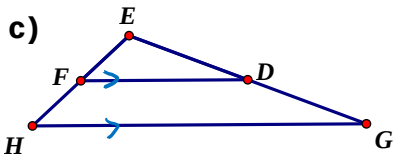
a)



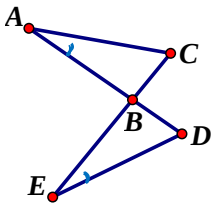
b)



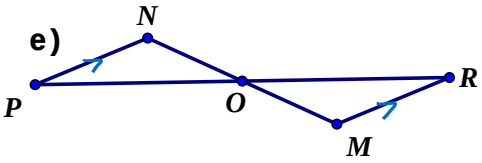
c)



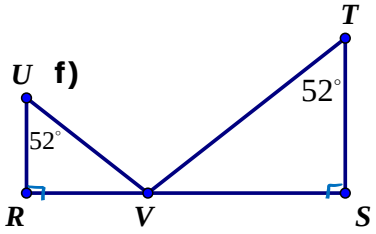
d)



e)

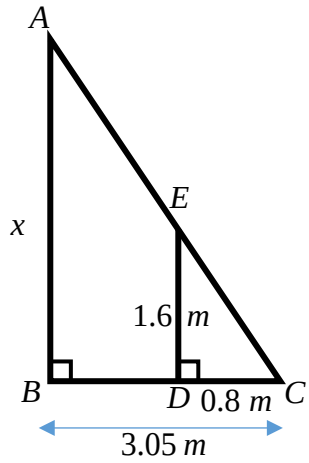


f)

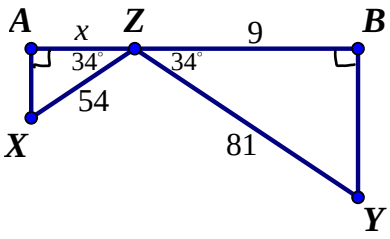


Example 2: Calculate the missing length x to the nearest tenth.

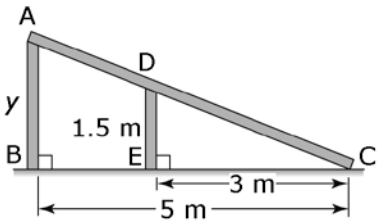
a)



b)



Example 4: The two vertical supports on a ramp form two triangles.
Find the height of the ramp by calculating the missing length, *y*.



Example 5: If the tennis player is standing 12 meters away from the net, find the value of the height h that the tennis ball must be hit so that it will pass just over the net and land 6 meters away from the base of the net.