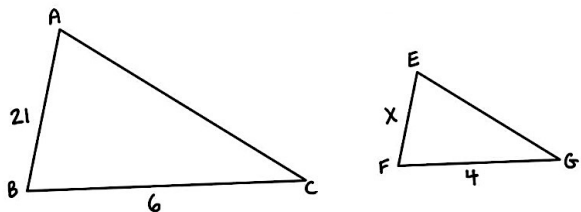
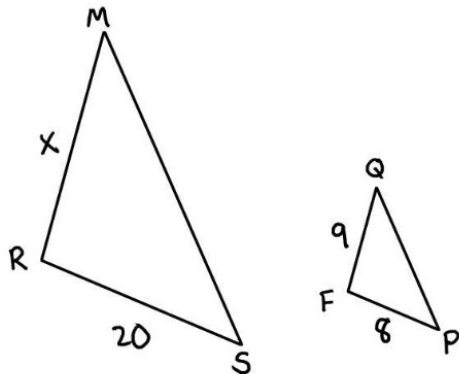


## Thursday: Finding missing Angles and Sides in Similar Figures:

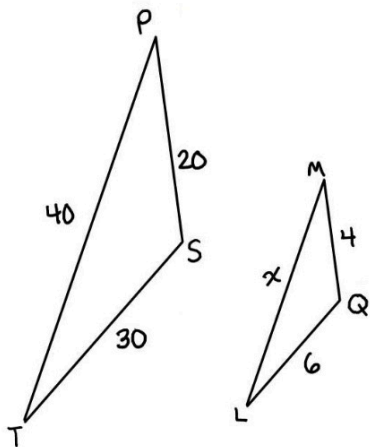
1. Given:  $\triangle ABC \sim \triangle EFG$ , find the value of  $x$ . Show your work. State the scale factor:



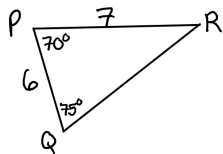
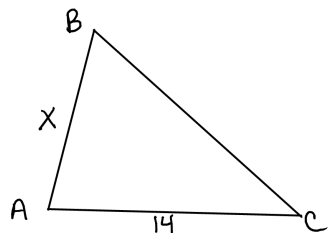
2. Given:  $\triangle MRS \sim \triangle QFP$ , find the value of  $x$ . Show your work. State the scale factor:



3. Given:  $\triangle PST \sim \triangle MQL$ , find the value of  $x$ . Show your work. State the scale factor:

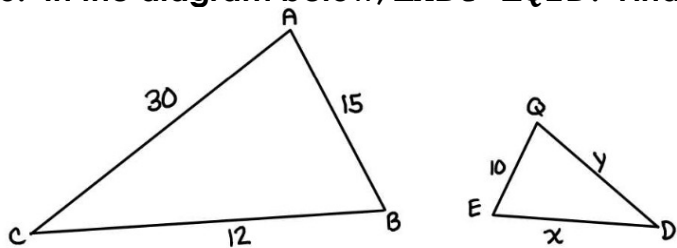


4. Given:  $\triangle ABC \sim \triangle PQR$ , find the value of  $x$  AND find all the missing angles in the diagram. BE CAREFUL about the orientation of the shapes!

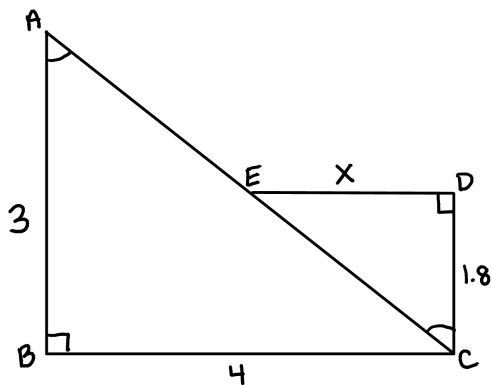


In the diagram below, pay very close attention to the orientation and the similarity statement before solving!

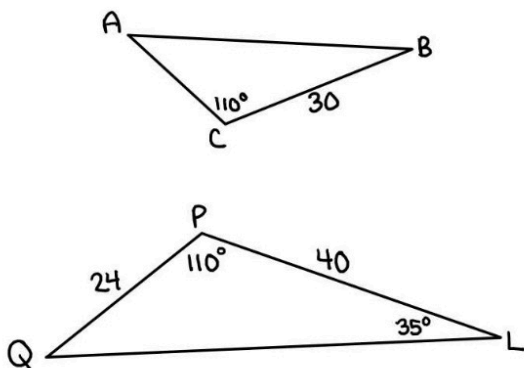
5. In the diagram below,  $\triangle ABC \sim \triangle QED$ . Find the value of  $x$ . State the scale factor:



6. Why are the triangles below similar? Set up a proportion and find the missing value of  $x$ :

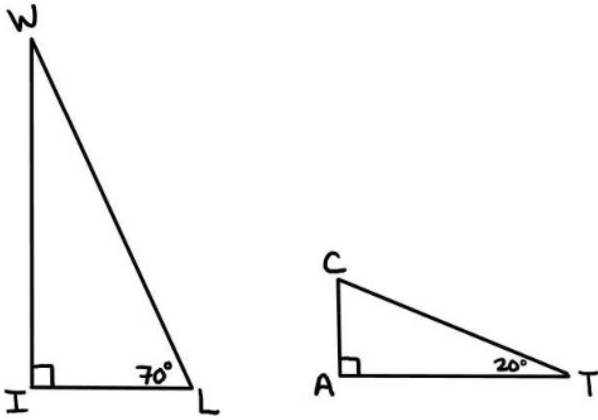


7. In the diagram below.  $\triangle ABC \sim \triangle QLP$ .



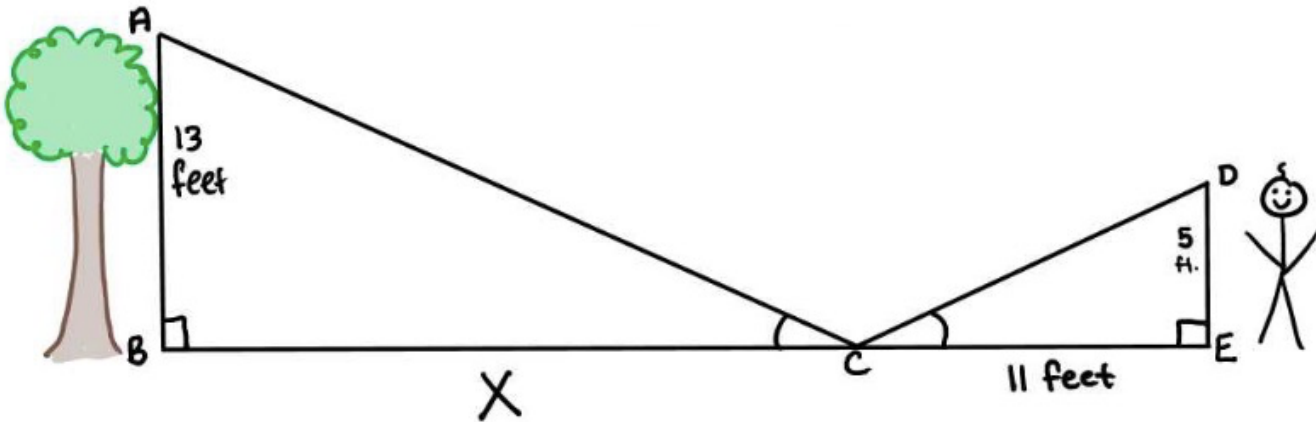
- Which side can you find in  $\triangle ABC$ ? Find that side.
- Find the measure of  $\angle Q$  in the triangle.
- Use the angles in  $\triangle QLP$  to find all the missing angles in  $\triangle ABC$ .
- Extra: Write a ratio that would be equivalent to  $\frac{PL}{PQ}$

8. Two right triangles are shown below.



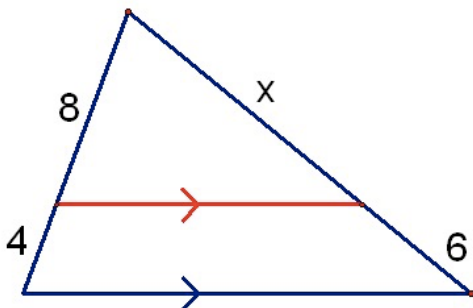
- Find the missing angle in each triangle. How does this show that the triangles are similar?
- If  $WI = 9.4$  and  $WL = 10$ . Find the side  $IL$  using the Pythagorean Theorem (to one decimal)
- If the scale factor from  $\Delta WIL$  to  $\Delta TAC$  is  $\frac{1}{2}$ , find all the missing sides of triangle  $\Delta TAC$ .

9. In the diagram below, Mr. Wontit is staring at a point C that creates two similar triangles as shown in the diagram below:

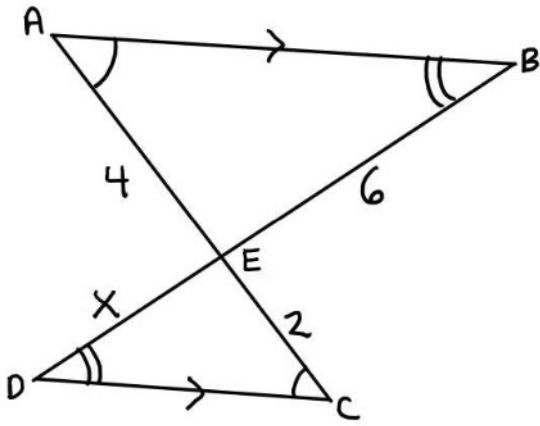


- Based on the diagram, how far is the bottom of the tree from the point C on the ground?

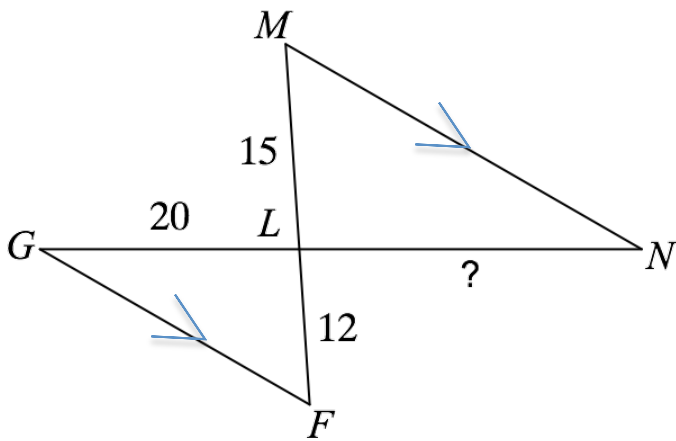
10. In the diagram below, a parallel line goes through the large triangle.



11. Set up a proportion and solve for  $x$ ! (Hint: the answer is NOT 1)

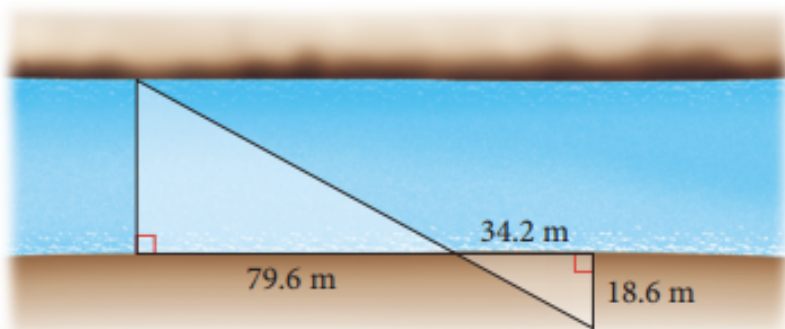


12. Given that  $\triangle GFL \sim \triangle NML$  up a proportion below to solve for the missing sides.

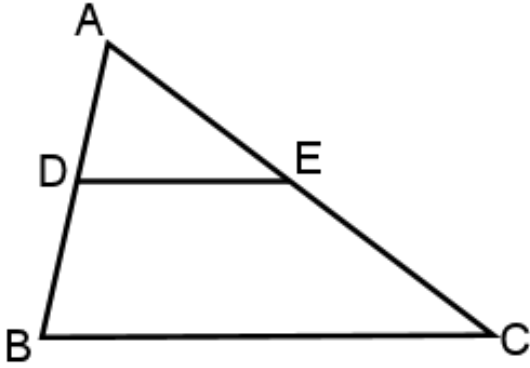


13.

To find the width of a river, Jordan surveys the area and finds the following measures. Find the width of the river.

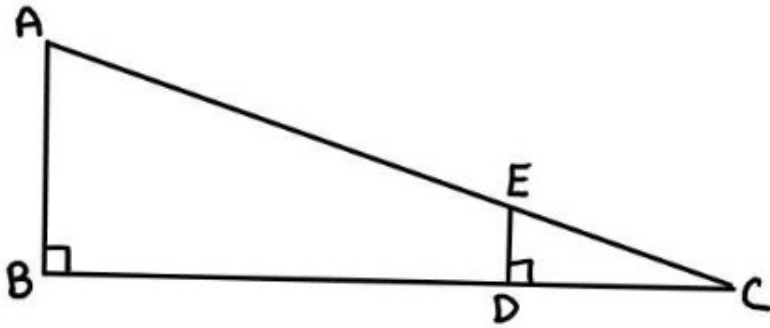


14. In the diagram below,  $DE$  is parallel to  $BC$ .  $AD = 3$ ,  $BD = 4$  and  $AE = 6$



a) Find the length of side  $EC$  and use it to find the entire side  $AC$ .

15. In the triangles below,  $\triangle ABC \sim \triangle EDC$ .  $AC = 13$ ,  $AB = 5$ , and  $BC = 12$ ,



a) If  $DC = 3$ , find the length of  $ED$ .

b) Find the length of  $EC$  and use it to find the length of  $AE$ .