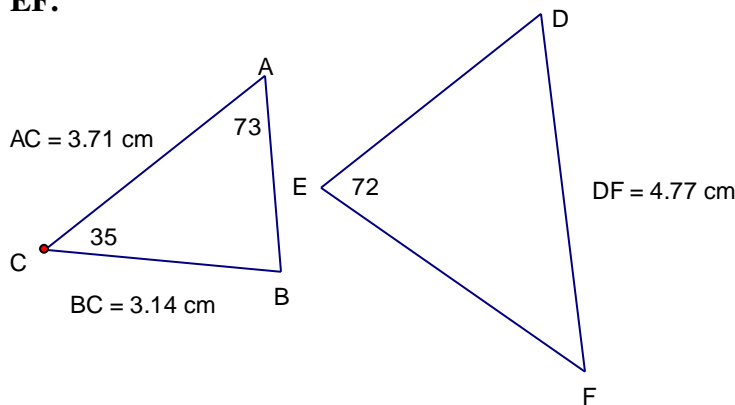


✚ *homework check:* Lesson 1 - 3

✚ *note:* Similar Triangles

Triangles are similar if the corresponding angles are equal *and* the corresponding sides are proportional. We use the symbol \sim to mean similar when comparing triangles. For example,

- a) Given the two triangles ABC and DEF are similar triangles, find the measure of side EF.



Find missing measure by establishing proportions:

$$\frac{AC}{BC} = \frac{DF}{EF}$$

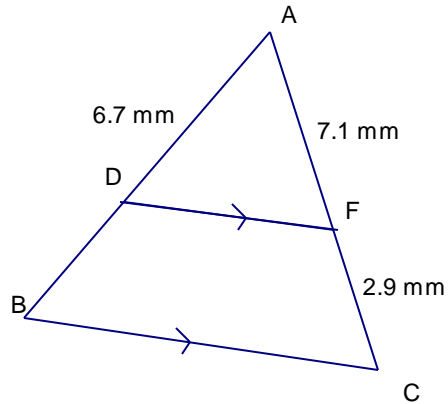
$$\frac{3.71}{3.14} = \frac{4.77}{EF} \text{ and cross multiply}$$

$$3.71EF = 3.14 \times 4.77$$

$$EF = \frac{3.14 \times 4.77}{3.71}$$

$$EF = 4.04 \text{ cm}$$

- b) Given that segments DF and BC are parallel, $AD = 6.7$ mm, $AF = 7.1$ mm, and $FC = 2.9$ mm, find the length of AB and DB .



Because the segments DF and BC are parallel, all angles in the triangles are equal meaning that triangles ABC and ADF are similar and their sides are proportional:

$$\frac{AF}{AC} = \frac{AD}{AB}$$

$$\frac{7.1}{10} = \frac{6.7}{AB} \text{ and cross multiply}$$

$$7.1AB = 6.7 \times 10$$

$$AB = \frac{6.7 \times 10}{7.1}$$

$$AB = 9.4 \text{ mm}$$

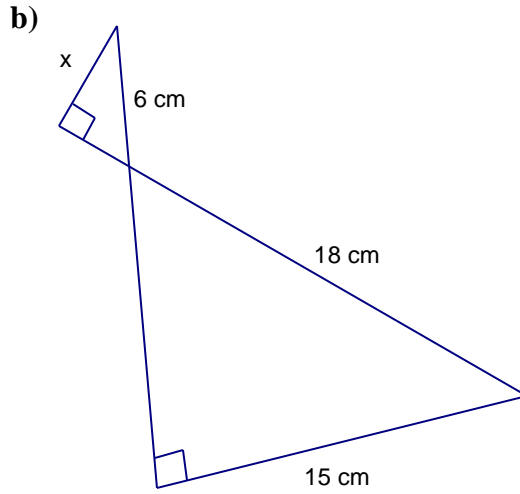
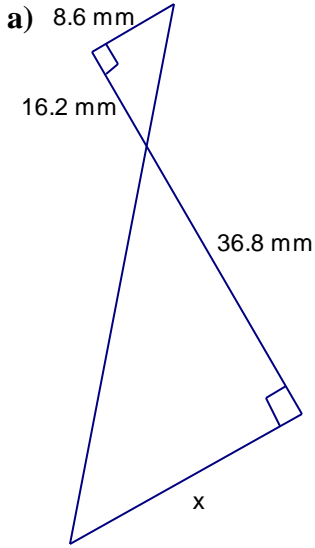
$$DB = 9.4 - 6.7$$

$$DB = 2.7 \text{ mm}$$

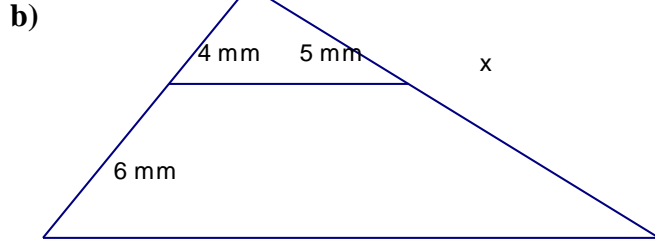
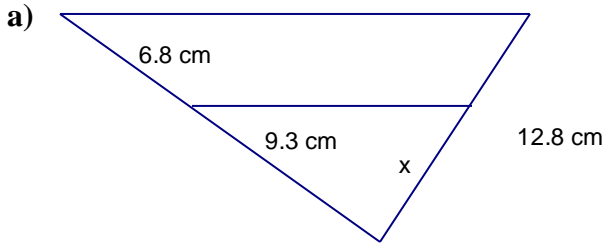
✚ **homework assignment: Lesson 1 - 4**

Lesson 1 – 4: Similar Triangles

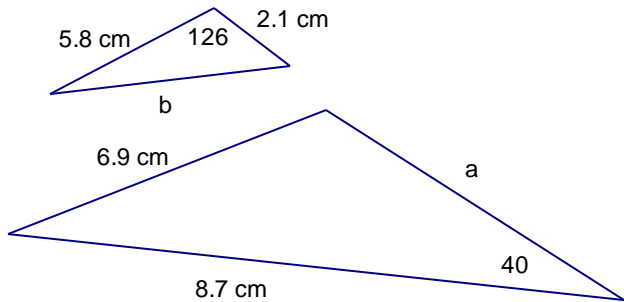
1. Given the similar triangles, find the length of the indicated side to the nearest tenth.



2. Find the unknown side in each similar triangle.



3. Calculate the unknowns to the nearest tenth.



4. In triangle VWX, $WX = 28$ cm, $VX = 35$ cm, and $VW = 14$ cm. In triangle PQR, $QR = 20$ cm, $PR = 12$ cm, and $PQ = 10$ cm. Are triangle VWX and triangle PQR similar? How do you know? Show your work.

5. Given triangle ABC and PQR are similar and $\angle A = 50^\circ$, $\angle B = 90^\circ$, $PQ = 12$ cm, $AB = 4$ cm, and $BC = 5$ cm, find the measure of BC.

6. Given triangle DEF and triangle PQR are similar, with $EF = 10''$, $DF = 9''$, $DE = 8''$ and $RQ = 0.5'$. Find the length of PQ.

7. In similar triangles ABC and XYZ, side $XZ = 21$ cm, $AB = 7$ cm, and $AC = 35$ cm. Find the length of YZ.