3.4

USING SIMILAR TRIANGLES

Using Cross Products to Solve Proportions

Solve for the missing variable.

1) $\frac{b}{8} = \frac{15}{20}$

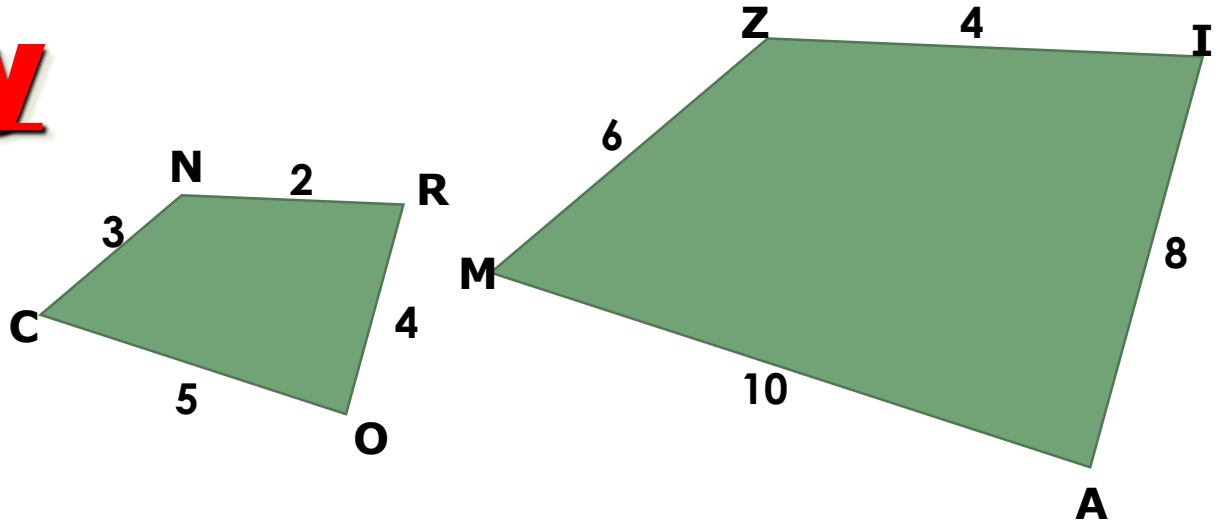
Using Cross Products to Solve Proportions

Solve for the missing variable.

2) $\frac{10}{a} = \frac{15}{18}$

Similarity

$CORN \sim MAIZ$

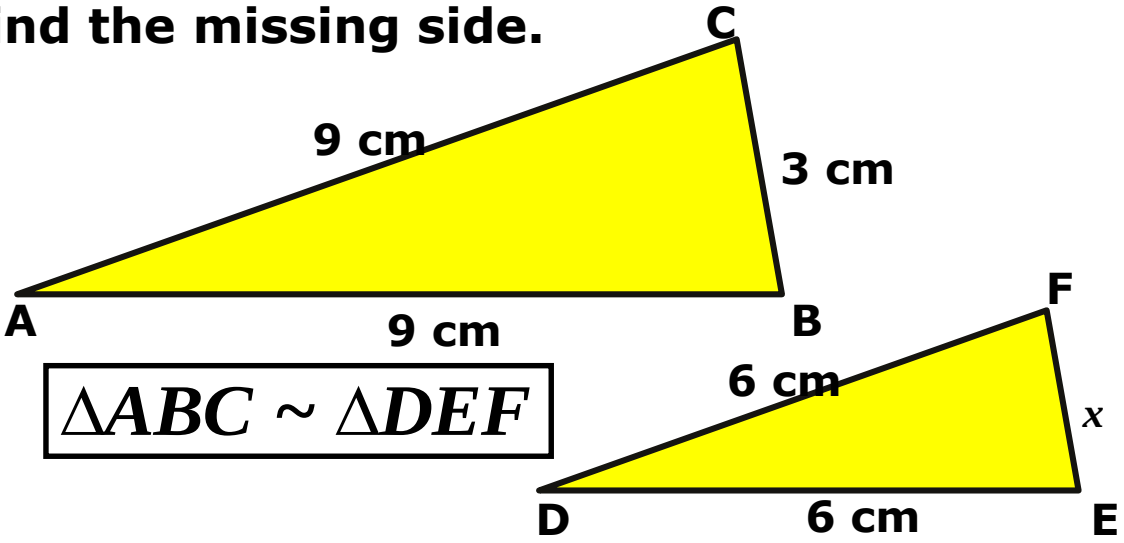


List 3 properties of similar shapes:

- Same shape, different size
- Corresponding angles are congruent
- Corresponding sides are proportional

PRACTICE

Find the missing side.

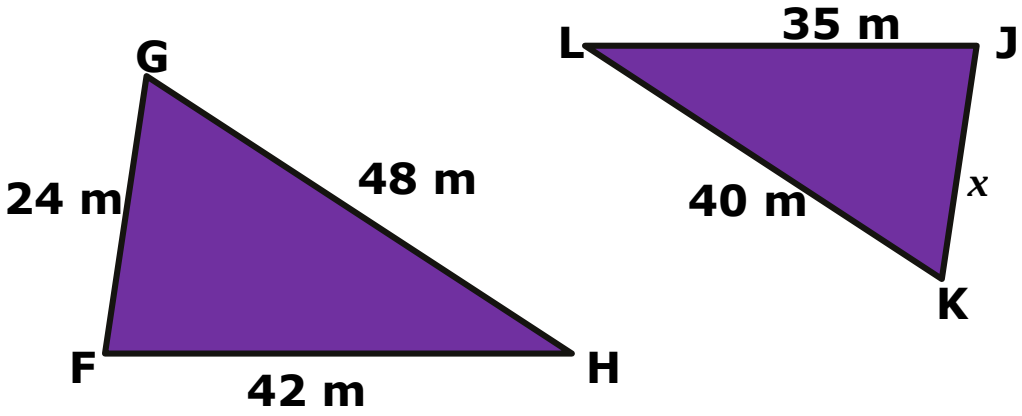


$\Delta ABC \sim \Delta DEF$

PRACTICE

$\Delta FGH \sim \Delta JKL$

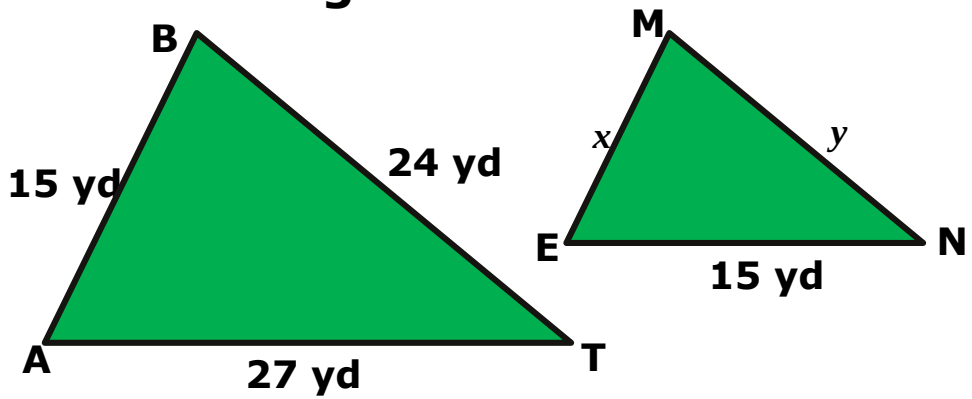
Find the missing side.



PRACTICE

$\Delta BAT \sim \Delta MEN$

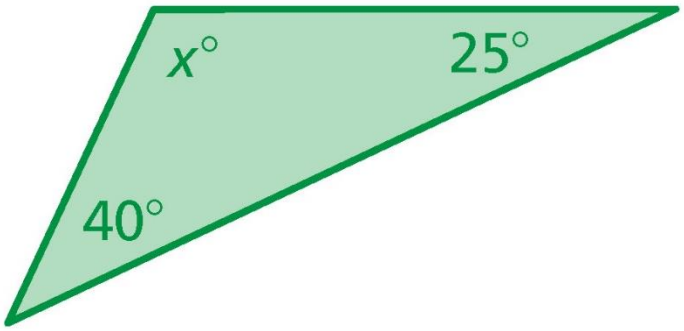
Find the missing sides.



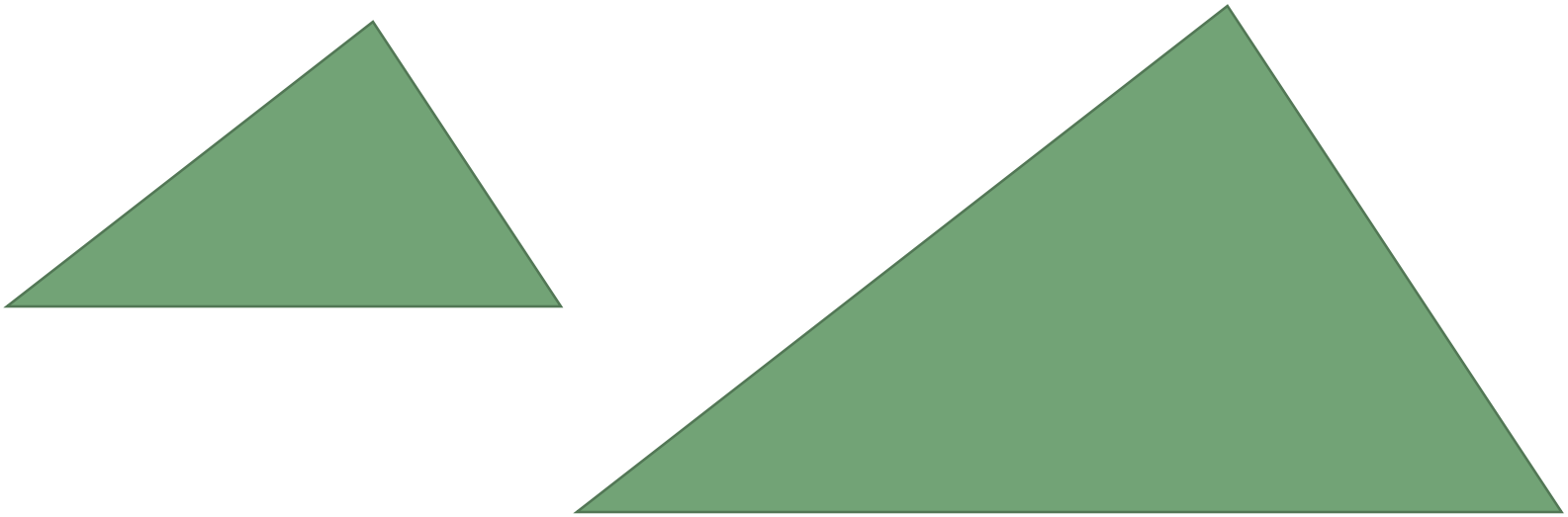
Review

Find the measures of the interior angles algebraically. SHOW WORK!

5)



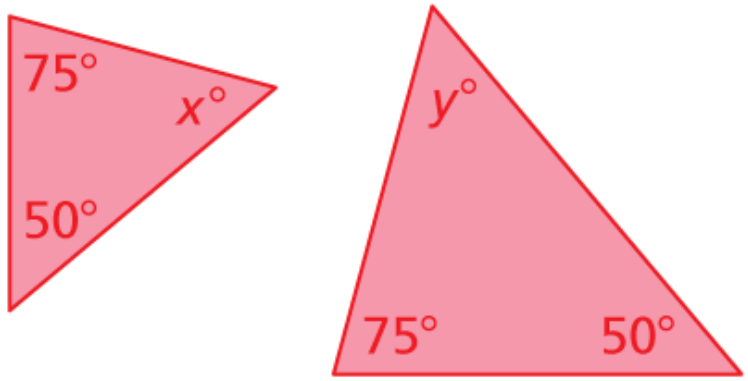
Third Angle Rule



If _____ _____ in one triangle are congruent to _____ _____ in another triangle, then the _____ _____ are _____.

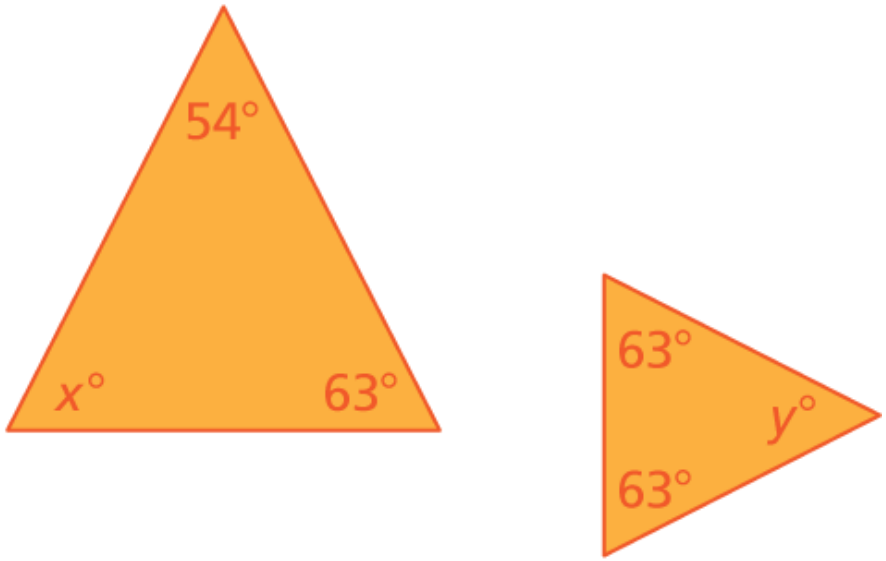
6) Tell whether the triangles are similar. Explain.

a.



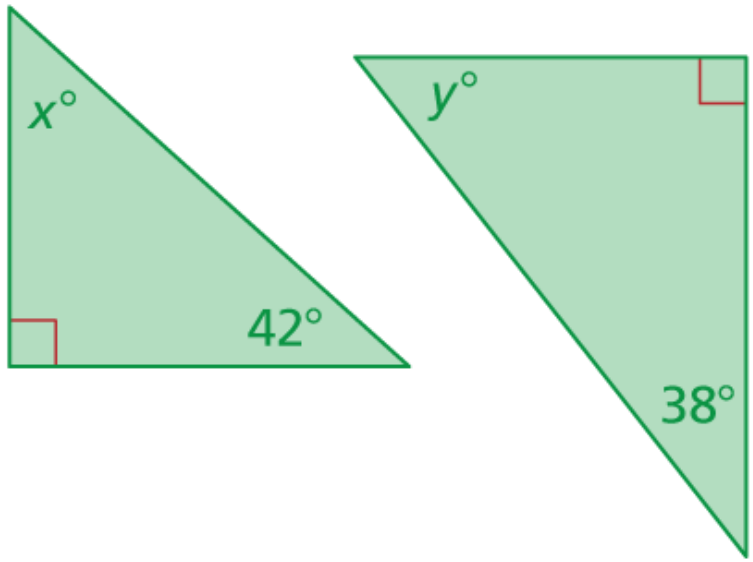
6) Tell whether the triangles are similar. Explain.

b.



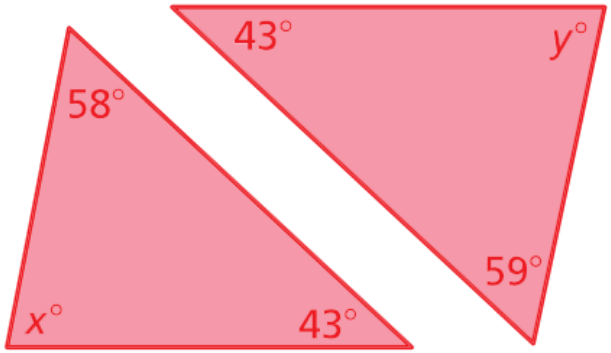
6) **Tell whether the triangles are similar. Explain.**

c.

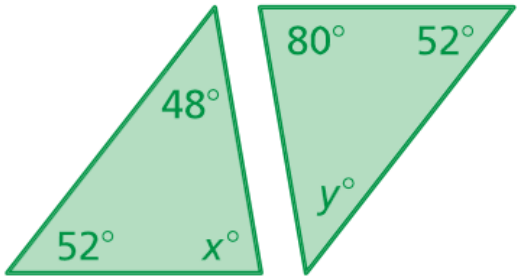


7) **Tell whether the triangles are similar. Explain.**

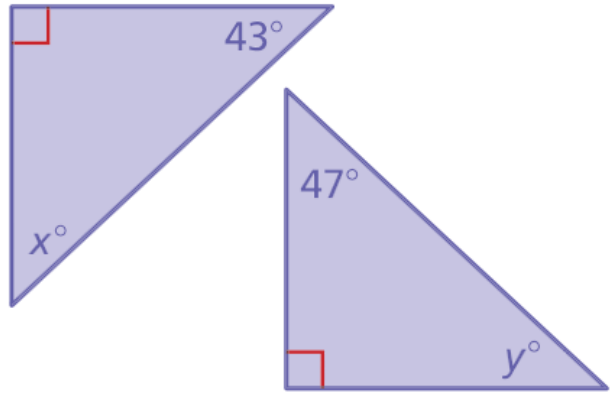
a.



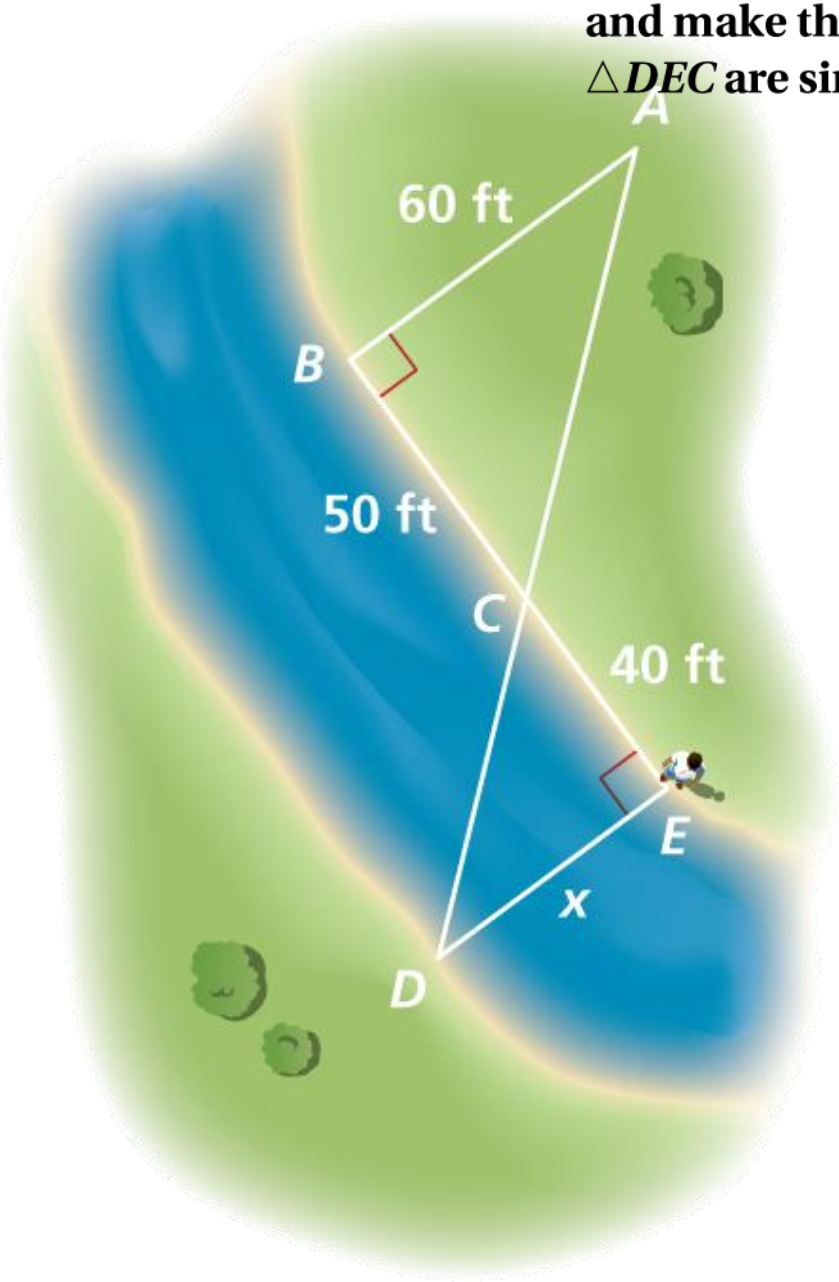
b.



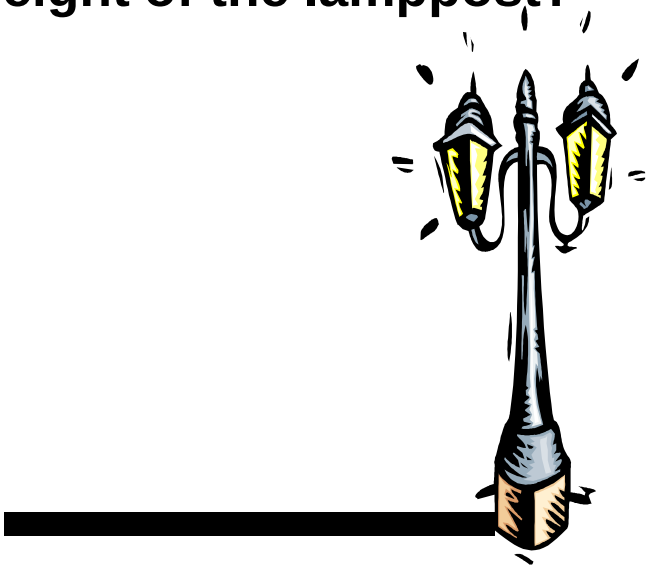
c.

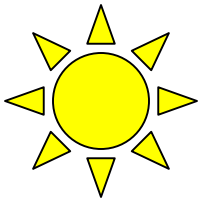


8) You plan to cross a river and want to know how far it is to the other side. You take measurements on your side of the river and make the drawing shown. (a) Explain why $\triangle ABC$ and $\triangle DEC$ are similar. (b) What is the distance x across the river?



9) **If a 5 foot person casts a 6-foot shadow at the same time that a lamppost casts an 18 foot shadow, what is the height of the lamppost?**





10) You can use similar triangles to find the height of a tree. Triangle ABC is similar to triangle DEC. What is the height of the tree?