Math 8

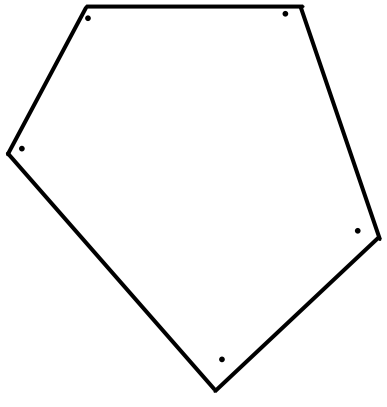
Our Goal: To use similar triangles to solve real-life problems

Warm Up: polygon angles worksheet

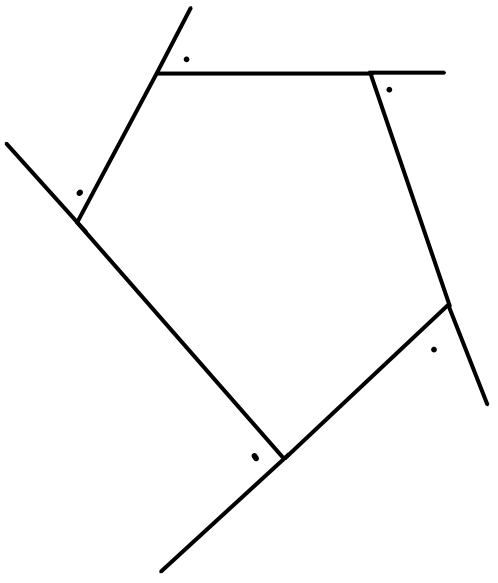
Today's Homework
3.4 Exercises, p.130-131: 1-16

Previous Homework
3.3 Exercises, p.123-124: 1-24

$(n-2)\cdot 180$

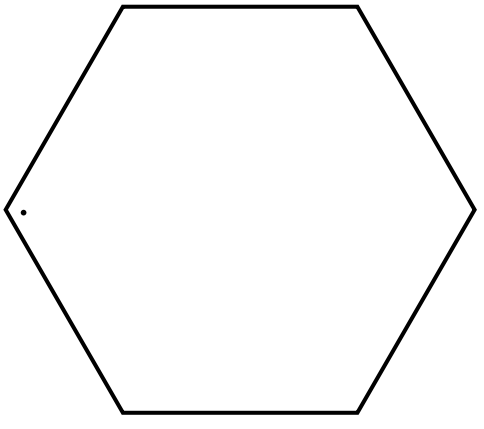


360



"regular"

$$\frac{(n-2)\cdot 180}{n}$$



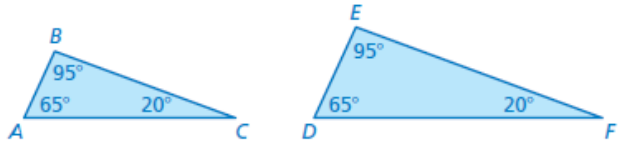
February 2, 2024

Key Idea

Angles of Similar Triangles

Words When two angles in one triangle are congruent to two angles in another triangle, the third angles are also congruent and the triangles are similar.

Example

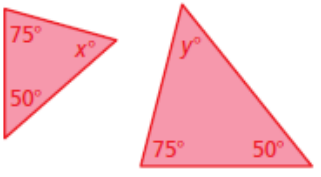


Triangle ABC is similar to Triangle DEF: $\triangle ABC \sim \triangle DEF$.

If 2 angles of 1 triangle equal 2 angles of another triangle, then the triangles have the same shape.

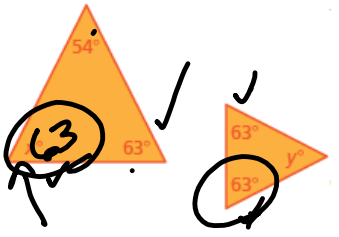
Tell whether the triangles are similar. Explain.

a.



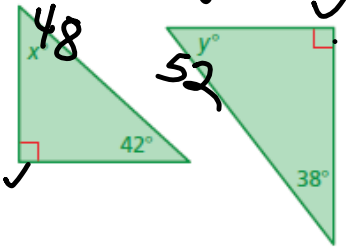
yes, b/c two 75° & 50° matching

b.



x+63+54 = 180

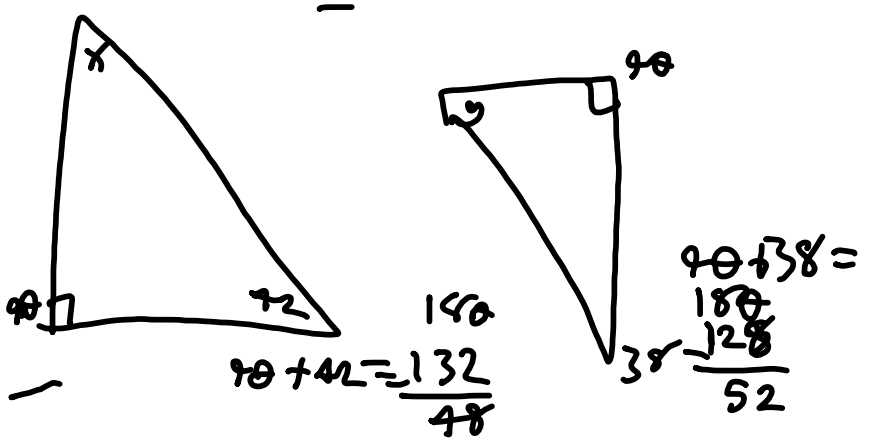
c.



48
52

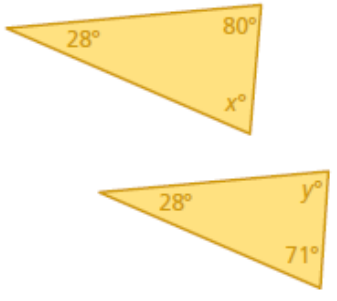
x+117=180
x=63

Not the same!

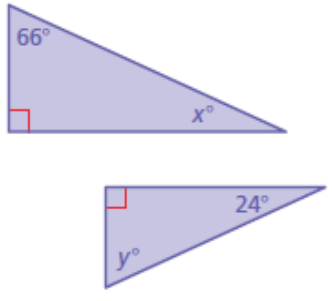


Tell whether the triangles are similar. Explain.

1.

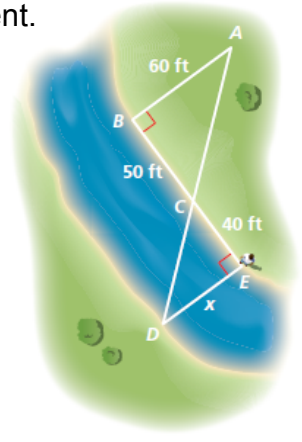


2.



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?

a. $\angle B$ and $\angle E$ are right angles, so they are congruent. $\angle ACB$ and $\angle DCE$ are vertical angles, so they are congruent. Because two angles in $\triangle ABC$ are congruent to two angles in $\triangle DEC$, the third angles are also congruent and the triangles are similar.



b. The ratios of the corresponding side lengths in similar triangles are equal. Write and solve a proportion to find x.

Exit Ticket: Are the two triangles similar? Explain.