Today's Learning Goal(s):

By the end of the class, I will be able to:

a) prove that two triangles are similar.
b) find angles, side lengths and areas of similar triangles.
c) distinguish between congruent and *similar.*

Return and correct SWYK 6.2
No root on test!

Yesterday's entertainment:
Remember: **to find the roots means to solve for the *x*-intercepts.**
To solve for the *x*-intercepts, ALWAYS try to factor the equation first,
before trying the Quadratic Formula.

pp. 318-319 #1b, 2, 4bd, 5abd, 6acfg, 8, 9a, 13, 16*no rounding, 17
p. 317 #13

Today's practice: **Be ready for Unit 6 Summative on Tues. Dec. 13**

(Due Monday)   **Read pp.331-332 Ex. 1, Ex. 2, and Key Concepts**
pp. 333-334 #5bc, 6bc, 7b, 8b, 9b, 14, 15
a *ruler* is needed >>> p. 347 #1, 2
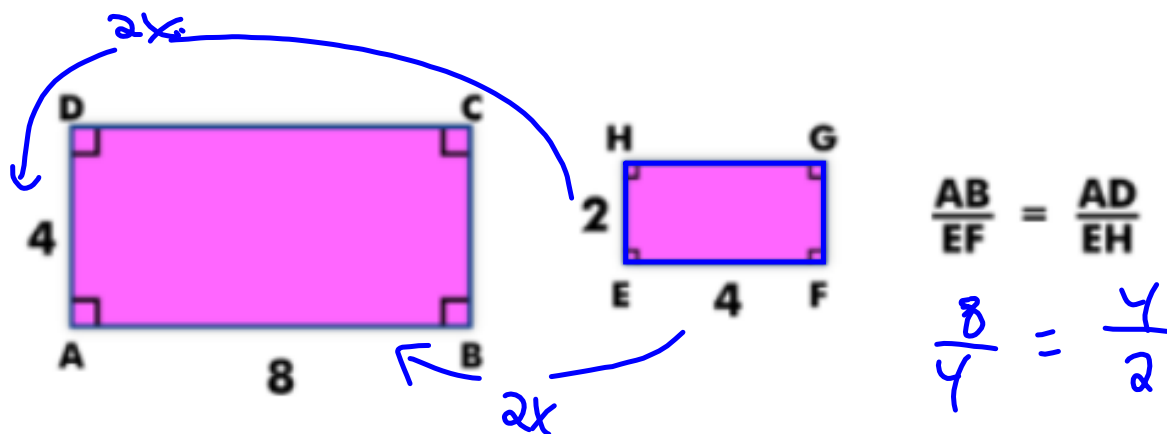
MPM 2DI   7.1 Investigate Properties of Similar Triangles   Date: _____

Similar geometric figures

Geometric figures are similar if **the ratio of the lengths of their corresponding sides are equal** and **their corresponding angles are congruent.**

$$\frac{AB}{EF} = \frac{AD}{EH}$$

$$\frac{8}{4} = \frac{4}{2}$$

The scale factor, *k*, relates corresponding side lengths.
In this example, *k* = __2__ .

Similar triangles

To show triangles are <u>similar</u>, it is sufficient to show that two angles of one triangle are congruent (equal) to two angles of the other triangle.

Which of these figure pairs are similar?

Solution

PRACTICE

A1

A2

D1

D2

Not similar ⟶

⟵ Similar ~
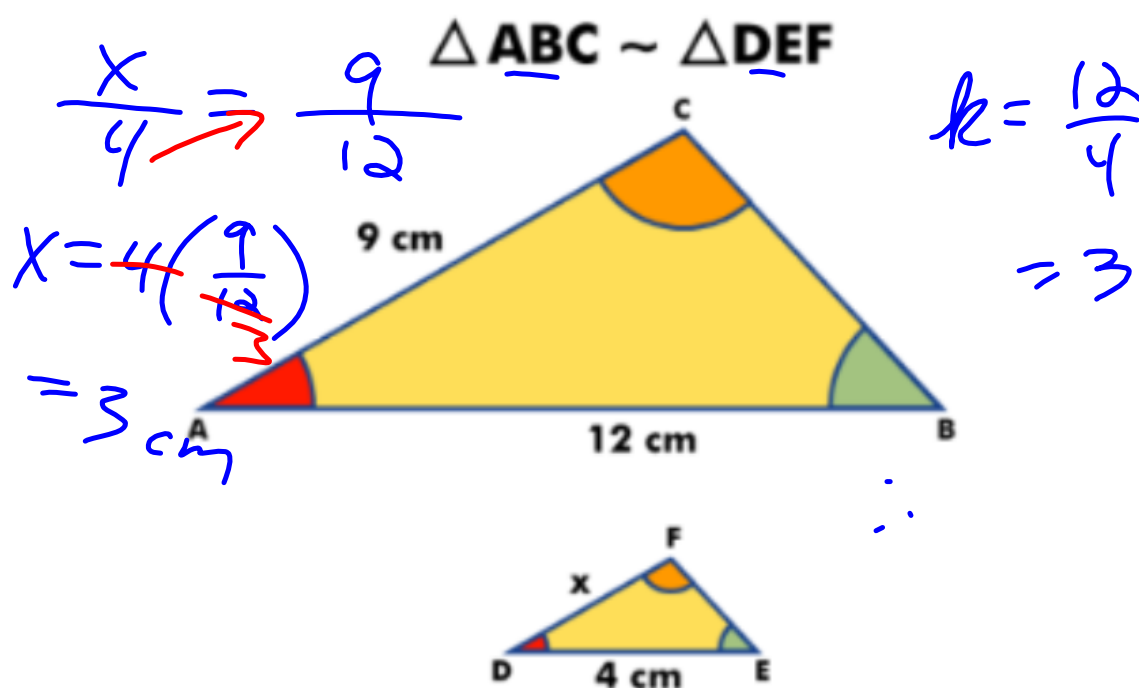
C2

C1

B2

B1

E2

E1

Complete the ratios for the corresponding sides

$\triangle$ **ABC** ~ $\triangle$ **DEF**

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

$$\frac{4}{8} = \frac{5}{10} = \frac{3}{6}$$
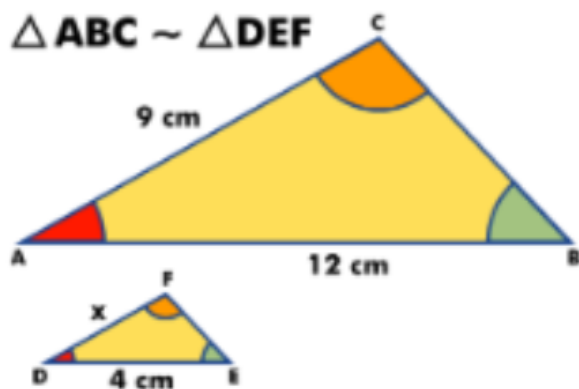
CONCEPT

Find the length of a side

$$\frac{x}{4} = \frac{9}{12}$$

$$x = 4\left(\frac{9}{12}\right)$$

$$= 3 \text{ cm}$$

$$k = \frac{12}{4}$$

$$= 3$$

△ ABC ~ △DEF

9 cm

C

12 cm

A   B

F

X

D   4 cm   E

∴

Solution

△ABC ~ △DEF

$$\frac{AB}{DE} = \frac{AC}{DF}$$

$$\frac{12}{4} = \frac{9}{x}$$

$$(12)(x) = (4)(9)$$

$$12x = 36$$

$$\frac{12x}{12} = \frac{36}{12}$$

$$x = 3 \qquad DF = 3 \text{ cm}$$

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