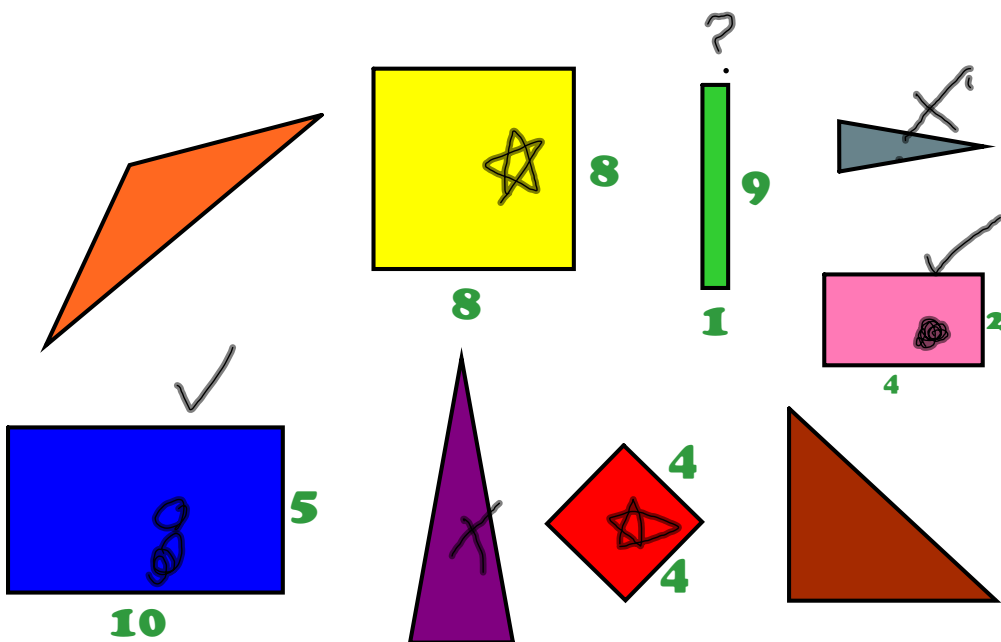


Section 5.6

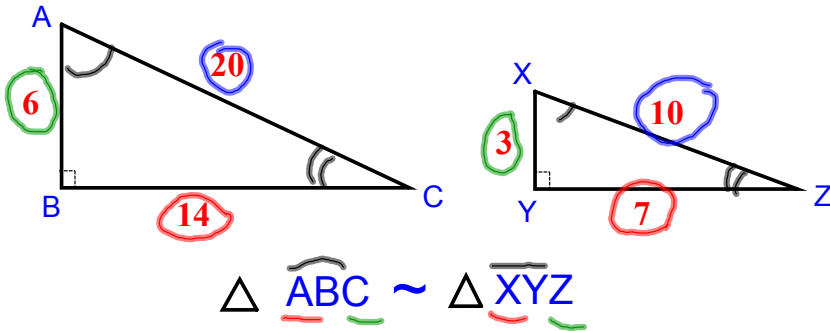
Similar Figures

Similar Figures

- Figures that have the same shape, but not the same size



- To prove that two figures are SIMILAR:**
- 1: show that corresponding angles are equal**
 - 2: show that corresponding sides form equal ratios. (proportions)**



$$\triangle \underline{ABC} \sim \triangle \underline{XYZ}$$

Corresponding Angles

$$\angle A \cong \angle X$$

$$\angle B \cong \angle Y$$

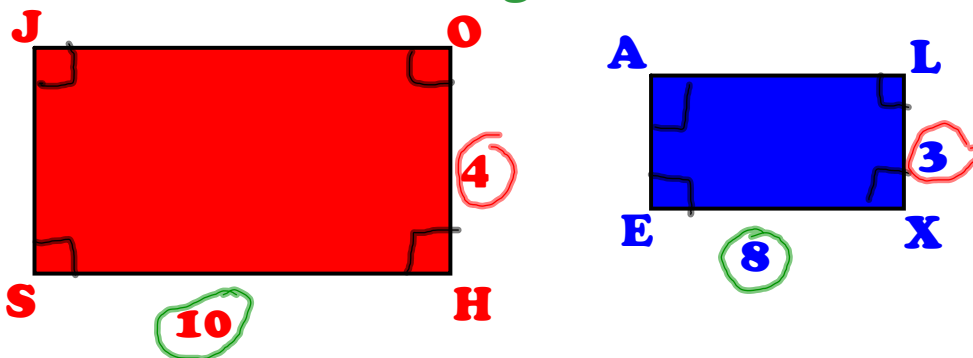
$$\angle C \cong \angle Z$$

Corresponding Sides

$$\frac{6}{3} \frac{AB}{XY} = \frac{20}{10} \frac{AC}{XZ} = \frac{14}{7} \frac{BC}{YZ}$$

EXAMPLE 1

Are the two figures similar?

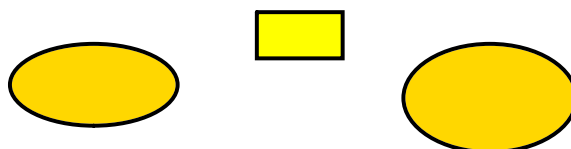


JOSH NO **ALEX**

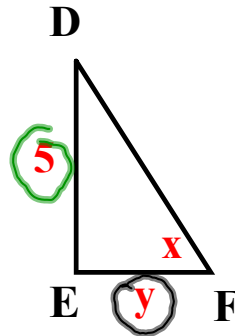
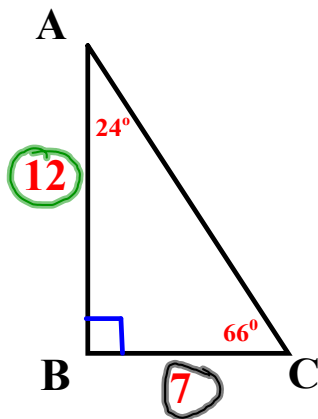
Angles: all = 90°

Sides: $\frac{10}{8} \neq \frac{4}{3}$

$$30 \neq 32$$



Triangle ABC is similar to triangle DEF. Find the value of x & y.



$$x = 66^\circ$$

Big
small

$$\frac{12}{5} = \frac{7}{y}$$

$$\frac{12y}{12} = \frac{35}{12}$$

$$y = 2\frac{11}{12}$$

Real World Example

A 5 ft person standing near a tree has a shadow 12 ft long. At the same time, the tree has a shadow 42 ft long. What is the height of the tree?

actual height
shadow

$$\frac{5}{12} = \frac{x}{42}$$

$$\frac{12x}{12} = \frac{210}{12}$$

$$x = 17\frac{1}{2}$$

Homework:
p. 269 #1-7 all, 9-12 all,
25, 42, 50-52

Show work on

3, 4, 7, 9-12 , 25, 50-52