Notes for Lesson 7-4

AA similarity postulate: If two angles of one triangle are congruent to two angles of another triangle, then the triangles are similar

Explain why this works knowing that similar polygons must have ALL corresponding angles congruent in order to be similar.

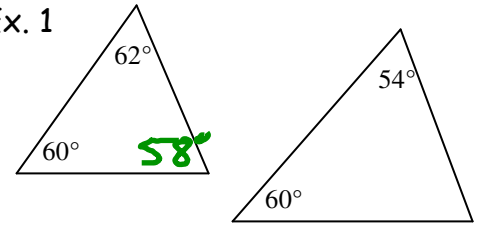
Since there are only 3 ∠'s ... if 2 are ≅ then the third ∠ in each must be ≅

Does this mean that any polygon could just match two of its angles to another polygon and be similar? Why or why not?

NO, because they would have too many unknown ∠'s to assure similarity

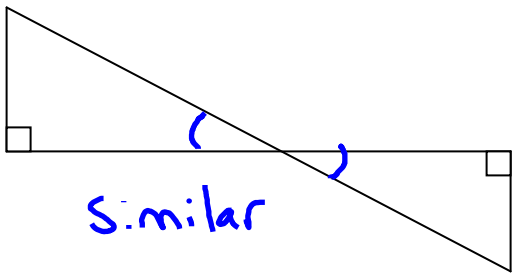
Tell whether the following triangles are similar or not similar by the AA postulate. If you cannot reach a conclusion, write *no conclusion possible*.

Ex. 1



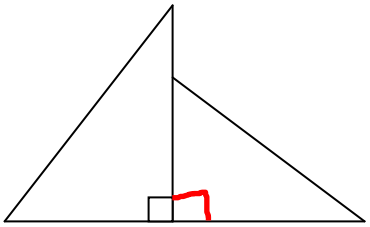
Not Similar

Ex. 2



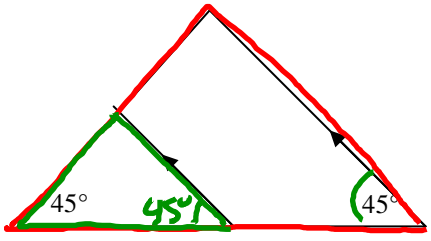
Similar

Ex. 3



No conclusion possible

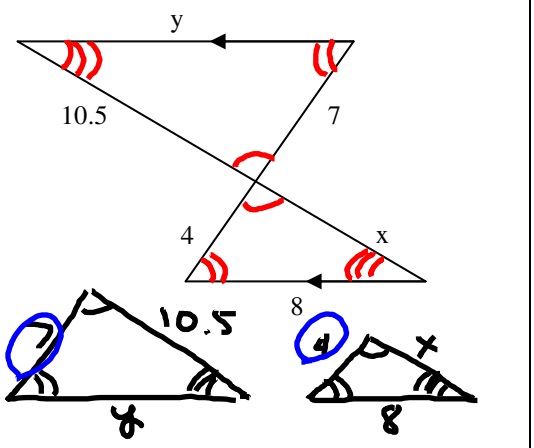
Ex. 4



Similar

Set up a proportion to find the values of x and y.

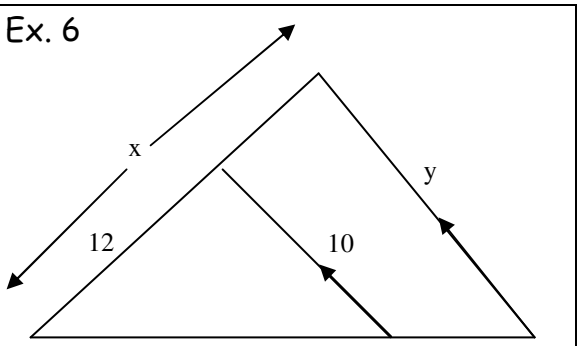
Ex. 5

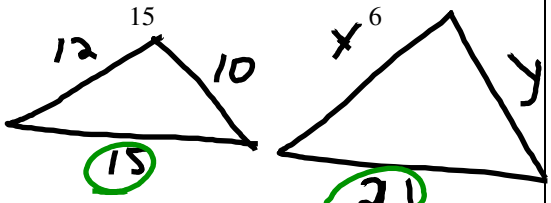


$\frac{4}{7} = \frac{8}{y}$ $\quad y = 14$

$\frac{4}{7} = \frac{x}{10.5}$ $\quad 7x = 42$ $\quad x = 6$

Ex. 6



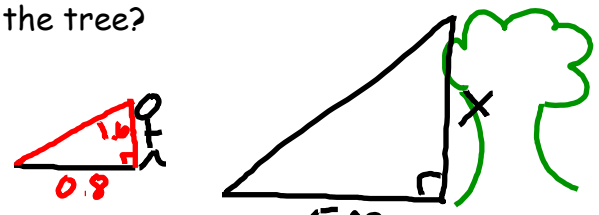


$\frac{5}{7} = \frac{12}{x}$ $\quad 5x = 84$ $\quad x = 16.8$

$\frac{5}{7} = \frac{10}{y}$ $\quad y = 14$

Ex. 7

Cecelia wanted to find the height of a certain tree for a report in her Biology class. Her method used shadows as shown in the diagram. She measured the shadow of the tree and found it was 5 m long. She measured her shadow and found it was 0.8 m long. If Cecelia is 1.6 m tall, about how tall is the tree?



$\frac{0.8}{1.6} = \frac{5}{x}$ $\quad 0.8x = 8$ $\quad x = 10\text{m}$