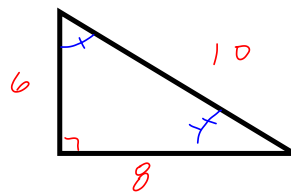
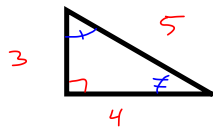


Lesson 3 : Similar Triangles

Similar Δ 's are proportionally the same, just smaller or larger.

ex

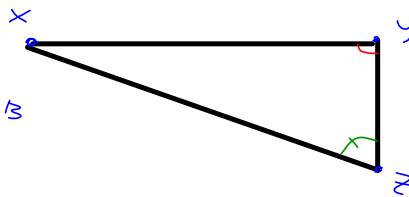
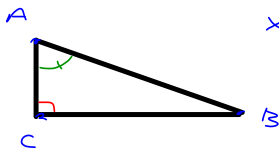


no congruent sides
ratios of corresponding sides are congruent

Big $\frac{10}{5} = 2$ Small $\frac{6}{3} = 2$
med $\frac{8}{4} = 2$

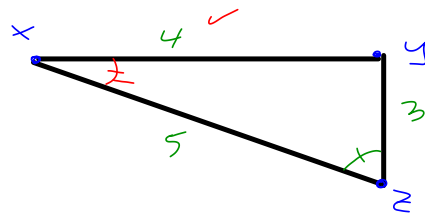
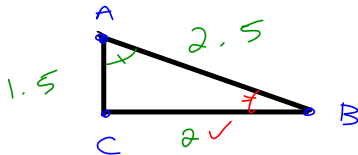
How to show 2 Δ s are similar.

P4



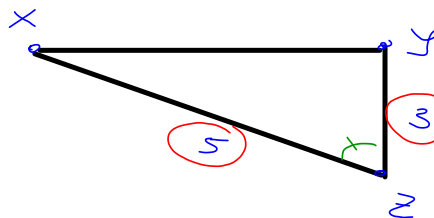
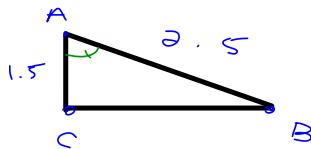
if $AA \cong AA$
then $\Delta \sim \Delta$

P5



if $\frac{4}{1.5} = \frac{5}{2.5} = \frac{5}{2.5}$
then $\Delta \sim \Delta$

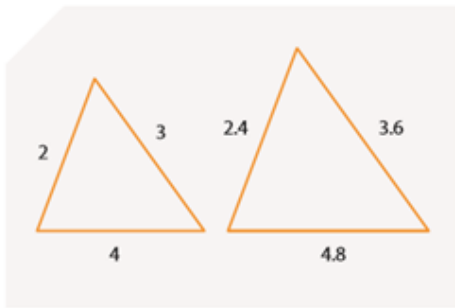
P6



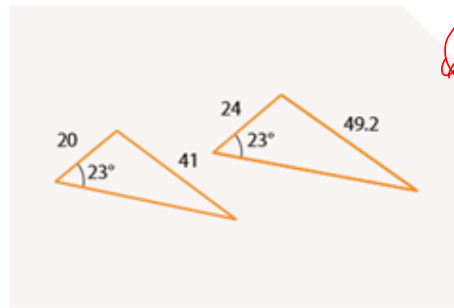
if $\frac{5}{1.5} = \frac{3}{2.5} = \frac{5}{2.5}$
and contained $AA \cong AA$
then $\Delta \sim \Delta$

5 For each pair of triangles below, indicate whether they are necessarily similar triangles. If so, identify the similarity criterion.

a)



b)



~~4 AA~~
~~5 SSS~~
~~5 SSS~~
~~5 SSS~~
~~CA = A~~

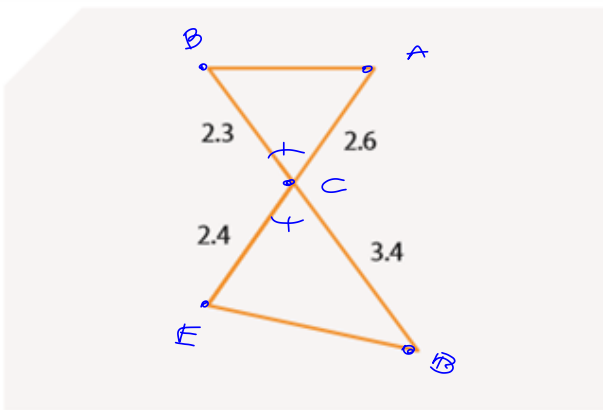
Big Δ $\frac{2.4}{2} = 1.2$ $\frac{3.6}{3} = 1.2$
 Little Δ

$\frac{4.8}{4} = 1.2$

Yes

$\frac{49.2}{41} = 1.2$
 $\frac{24}{20} = 1.2$

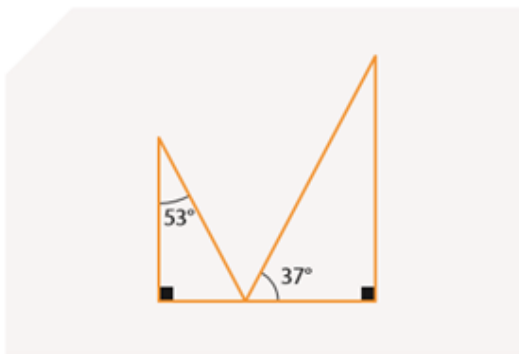
No



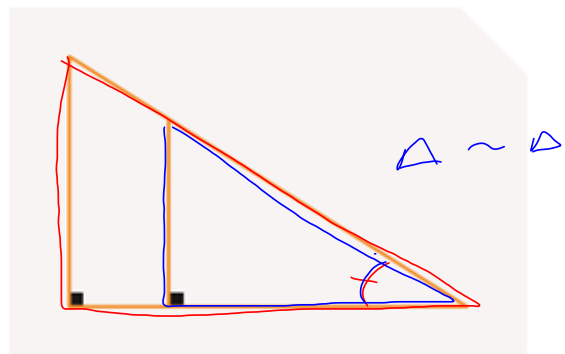
4 AA
5 $\frac{S}{S} = \frac{S}{S} = \frac{S}{S}$
6 $\frac{S}{S} = \frac{S}{S}$
C A \cong A

Finish d) - f)
on pg 29.

e)



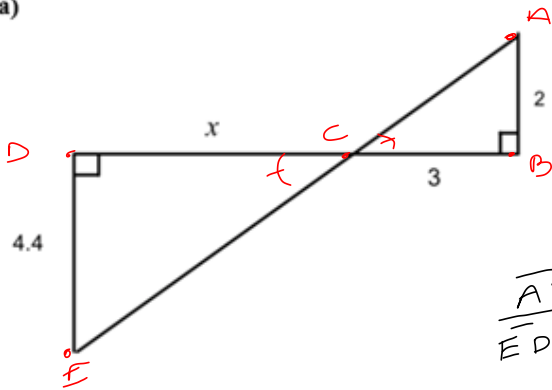
f)



Finding x in Similar Triangles

Example: Indicate why the below triangles are similar by identifying the similarity criterion. Then find the value of x .

a)



since $\angle A \hat{=} \angle A$
then $\triangle \sim \triangle$

$$\triangle ABC \sim \triangle CDE$$

✓ ✓
AA
S/S/S
S/S/S AA

looking for x
step i. construct equation

$$\frac{AB}{ED} = \frac{AC}{CE} = \frac{BC}{DC}$$

step ii. sub in values and solve w/ 0.0.

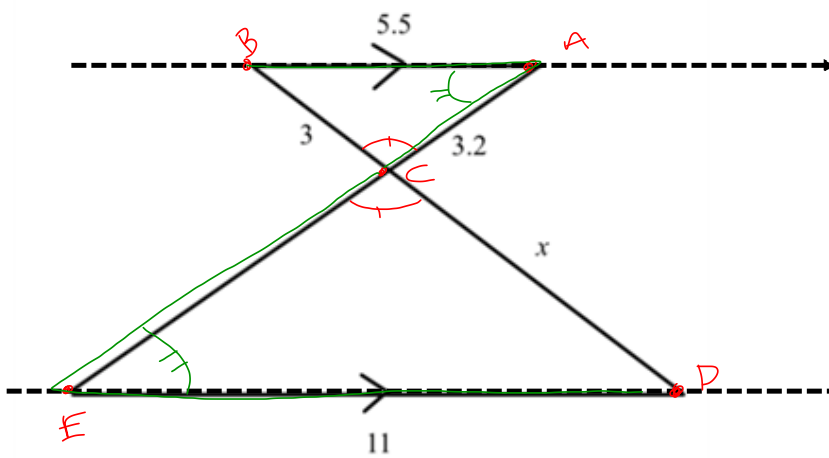
$$\frac{AB}{ED} = \frac{BC}{DC}$$

$$\frac{2}{4.4} = \frac{3}{x}$$

$$2x = \frac{13.2}{2}$$

$$x = 6.6$$

b)



Tip: extend
|| lines

$\triangle \sim \triangle$

AA

$$\frac{\overline{ED}}{\overline{BA}} = \frac{\overline{EC}}{\overline{AC}} = \frac{\overline{CD}}{\overline{BC}}$$

$$\frac{\overline{ED}}{\overline{BA}} = \frac{\overline{CD}}{\overline{BC}}$$

$$\frac{11}{5.5} = \frac{x}{3}$$

evaluate

$$3 \cdot 2 = \left(\frac{x}{3} \right) 3$$

$$6 = x$$

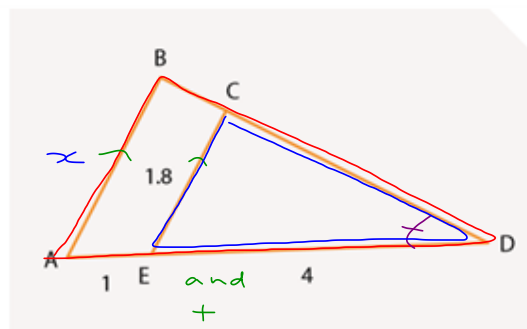
Consider triangle ABD to the right. Sides AB and EC are parallel. Determine the length of side AB.

$$\frac{\text{red}}{\text{blue}} = \frac{\overline{AB}}{\overline{CE}} = \frac{\overline{AD}}{\overline{ED}}$$

$$1.8 \left(\frac{x}{1.8} \right) = \left(\frac{5}{4} \right) 1.8$$

$$x = 2.25$$

p 30 - 33 # 7 - # 11
 p 36 - 39 # 1 - 4, 6



$$\angle BDA \cong \angle CDE$$