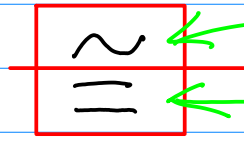


§ 11.2: Similar (\sim) Δ 's

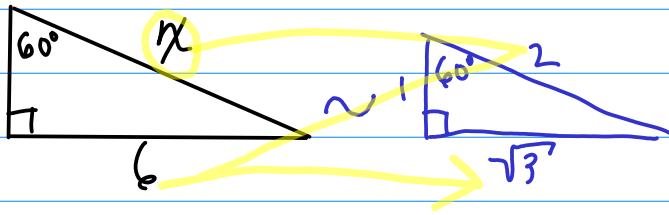
Congruent:
same size
& shape



* SIMILAR: same shape

same (=) size

Ex:



$$\frac{x}{2} = \frac{6}{\sqrt{3}}$$

$$\frac{x\sqrt{3}}{\sqrt{3}} = \frac{12\sqrt{3}}{\sqrt{3} \cdot \sqrt{3}}$$

$$x = \frac{12\sqrt{3}}{3}$$

$$x = 4\sqrt{3}$$

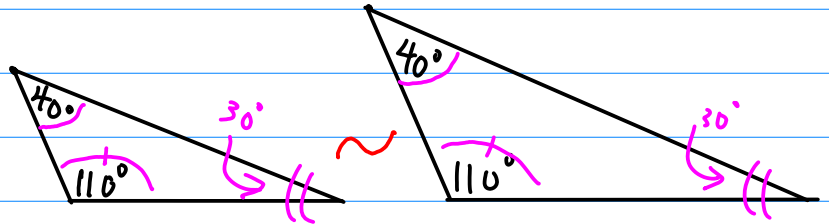
* Corresponding sides of $\sim \Delta$'s are in proportion

~~AAA~~
* AA Similarity:

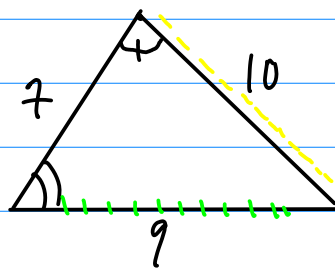
If 2 \angle 's in 1 Δ are \cong to 2 \angle 's in another

Δ , all corresponding \angle 's are \cong .

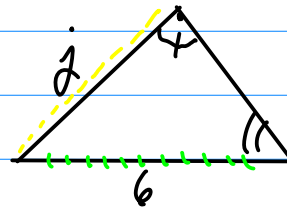
\therefore the Δ 's are \sim .



Ex: find j:



\sim
by
AA



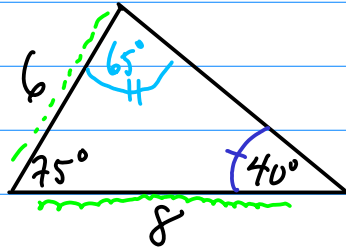
$$\frac{j}{10} = \frac{4}{9}$$

$$j = \frac{20}{3}$$

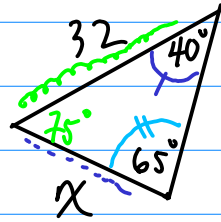
$$j = \frac{20}{3} = 6\frac{2}{3}$$

Not drawn to scale!

Ex:



~

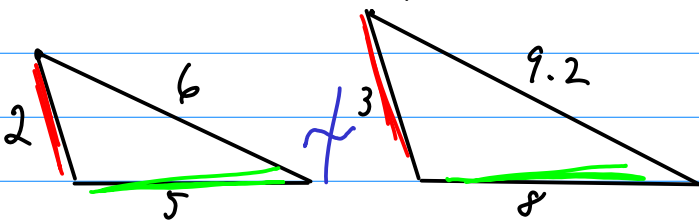


$$\frac{x}{6} = \frac{32}{8}$$

$$x = 24$$

Ex:

Are these Δ 's ~?



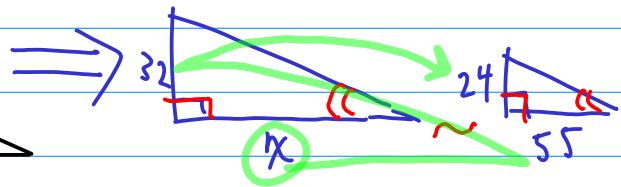
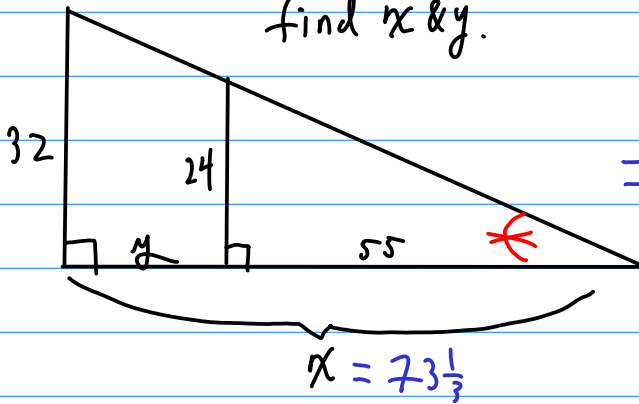
$$\frac{2}{3} \neq \frac{5}{8}$$

$$16 \neq 15$$

\therefore Not ~.

• Overlapping Rt Δ 's

find x & y .



$$\frac{x}{55} = \frac{32}{24}$$

$$\frac{1}{3}x = \frac{220}{3}$$

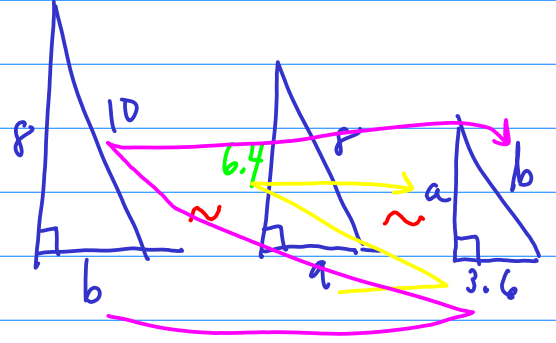
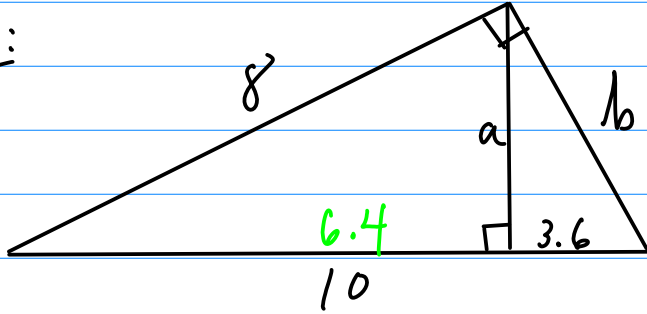
$$x = \frac{220}{3} = 73 \frac{1}{3}$$

$$y + \frac{5}{5} = \frac{6}{5} \frac{1}{3}$$

$$- \frac{5}{5} \quad - \frac{5}{5} \frac{0}{3}$$

$$y = 18 \frac{1}{3} = \frac{55}{3}$$

Ex:



* When an altitude is drawn to the hypotenuse of a rt. Δ , the 2 Δ 's formed are \sim to the original.

$$\begin{array}{l|l} \frac{a}{3.6} = \frac{6.4}{a} & \frac{b}{3.6} = \frac{10}{b} \\ \sqrt{a^2} = \sqrt{23.04} & \sqrt{b^2} = \sqrt{36} \\ a = 4.8 & b = 6 \end{array}$$