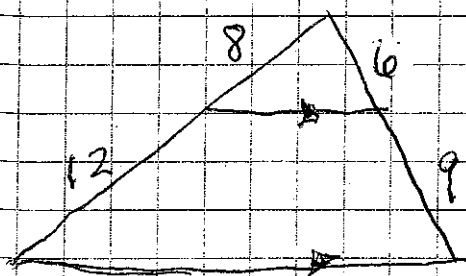


# Triangle Proportionality Theorem -

If a line parallel to one side of a triangle intersects the other two, then it divides the sides proportionally

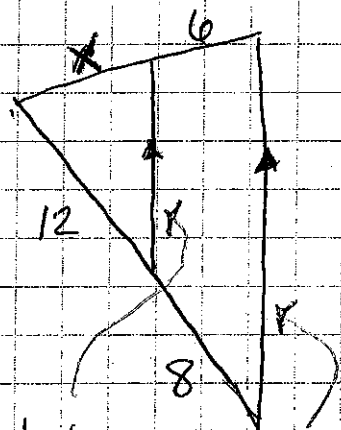


$$\frac{8}{12} = \frac{2}{3}$$

$$\frac{6}{9} = \frac{2}{3}$$

same ratio  
∴ proportional

EX.



find x.

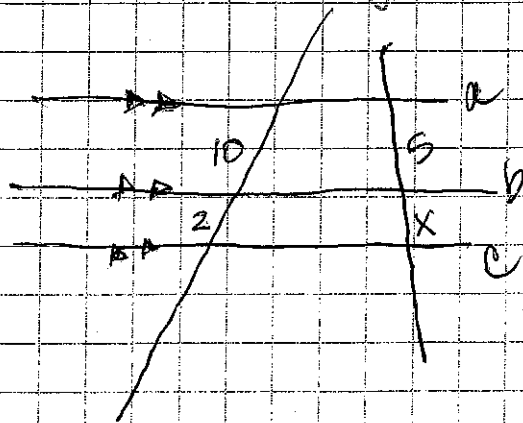
$$\frac{12}{8} = \frac{x}{6}$$

$$\frac{72}{8} = \frac{8x}{6}$$

$$9 = x$$

Also called  
"side splitter"  
theorem

Note this theorem  
Does not work for  
these segments.



$a \parallel b \parallel c$

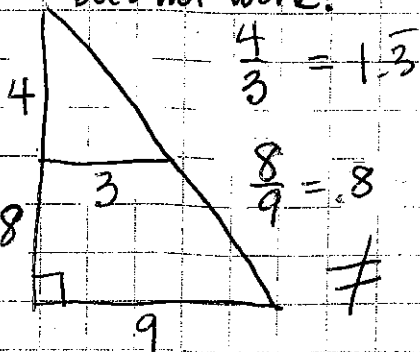
$$\frac{10}{2} = \frac{5}{x}$$

$$10x = 10$$

$$x = 1$$

## Counter Example:

Does not work!

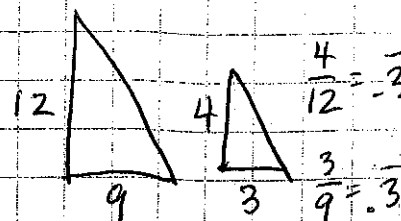


$$\frac{4}{3} = 1\frac{1}{3}$$

$$\frac{8}{9} = .8$$

$\neq$

you need to  
use similar  $\Delta$ .



$$\frac{4}{12} = \frac{1}{3}$$

$$\frac{3}{9} = \frac{1}{3}$$

They are prop.

∴ ~