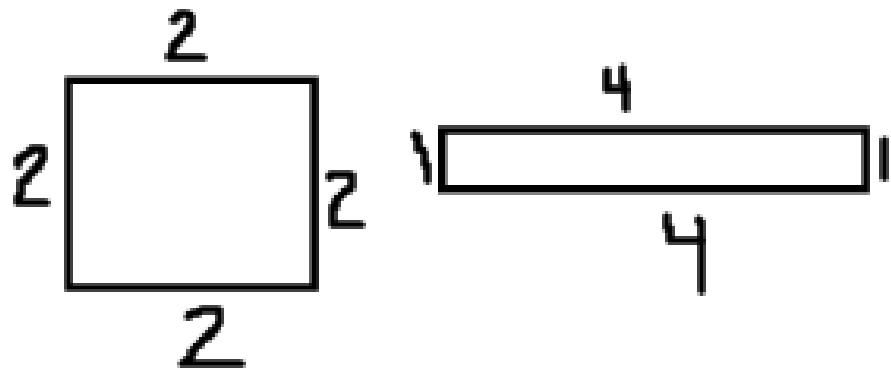


TRIANGLES: if the angles are the same it guarantees the sides will be proportional. If the sides are proportional it guarantees the angles will be the same. Not true of squares/other shapes.

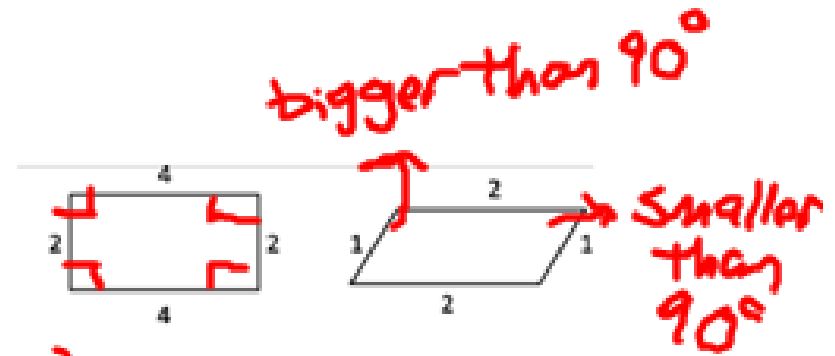


angles all same

NOT proportional sides

$$\begin{aligned} \text{Top} &= \frac{4}{2} = 2 \\ \text{Right} &= \frac{1}{2} = 0.5 \end{aligned}$$

NOT similar

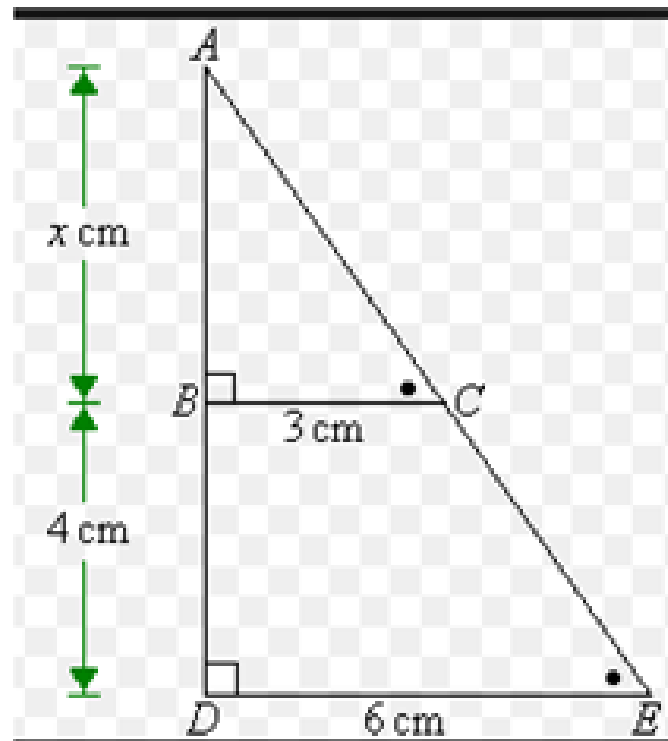


all sides are proportional

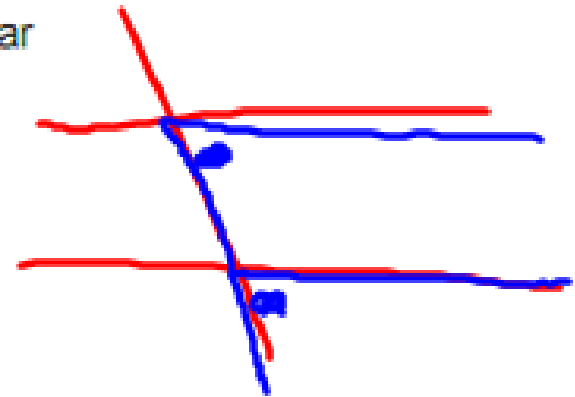
$$\begin{aligned} \text{Top} &= \frac{2}{4} = 0.5 \\ \text{Right} &= \frac{1}{2} = 0.5 \\ \text{Bottom} &= \frac{2}{4} = 0.5 \\ \text{Left} &= \frac{1}{2} = 0.5 \end{aligned}$$

NOT some angles
NOT similar

A triangle drawn inside another triangle like this is always similar



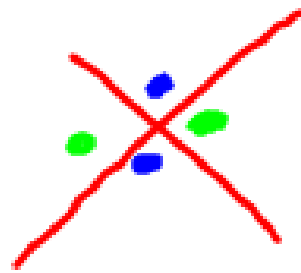
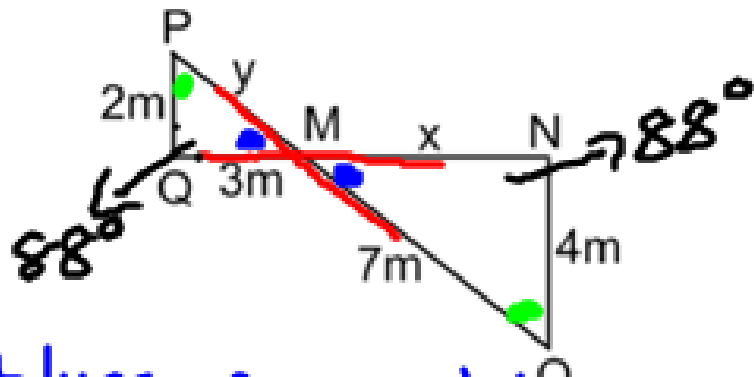
with parallel lines



F rule
angles inside F
are same
If the lines
are parallel,

$$\text{Bottoms} = \frac{6}{3} = 2$$

$$\text{Left: } \frac{4+x}{x} = 2$$



rule
opposite angles in
an X are equal

blues are equal because ^{x rule}
greens are equal
because all angles
in a triangle add up to 180.

SO SIMILAR TRIANGLES

$$\frac{x}{3} = \frac{7}{11} \Rightarrow x = \frac{21}{11} \approx 1.9$$

$x = 6$

$$\frac{y}{2} = \frac{4}{11} \Rightarrow y = \frac{8}{11} \approx 0.7$$

$y = 3.5$

pg.349 # 4, 5c, 6, 7,
9, 10, 11, 12, 15