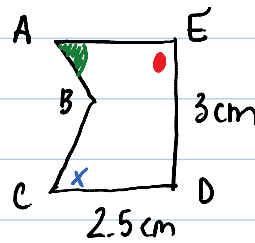
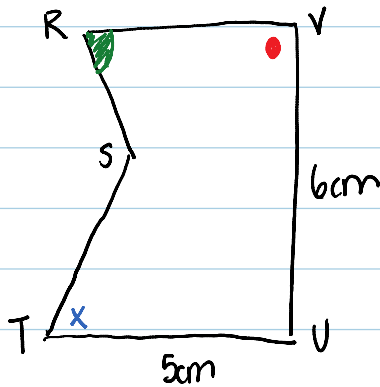


Working with Similar Figures

December-11-13
9:22 AM

2 figures can only be similar if:
 - all angles are $=$
 - all sides are $=$

Ex. #1



Are these 2 polygons similar?

$$\begin{aligned} \angle V &= \angle E \\ \angle R &= \angle A \\ \angle T &= \angle C \end{aligned}$$

} the symbols in the figures indicate that only these angles are $=$

$$\begin{aligned} \angle S &\text{ and } \angle U \\ \angle B &\text{ and } \angle D \end{aligned}$$

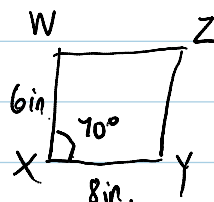
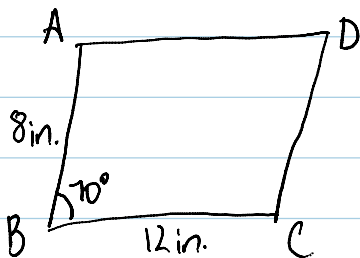
No evidence that these 2 angles are the same.

... therefore these 2 figures are NOT similar

Ex. #2

Facts about

Parallelograms: 1.) opposite angles are $=$
 2.) interior angles always add up to 360°



ANGLES:

$$\begin{aligned} \angle A = \angle C & \text{ are equal to} \\ \angle B = \angle D = 70^\circ & \end{aligned}$$

$$\begin{aligned} \angle W = \angle Y \\ \angle X = \angle Z = 70^\circ \end{aligned}$$

SIDES:

$$\frac{AB}{BC} = \frac{WX}{XY} \Rightarrow \frac{8}{12} \neq \frac{6}{8}$$

sides are not proportional

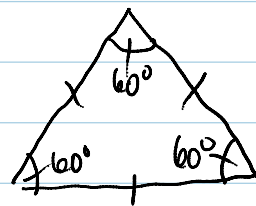
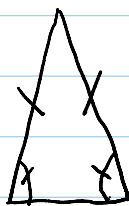
... therefore figures are NOT similar

Triangles:

- 3 sides
- 3 angles that add up to 180°

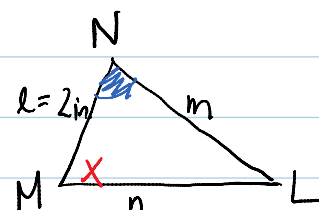
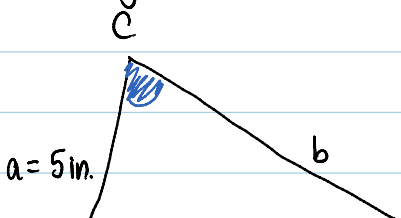
isosceles triangle

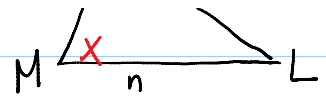
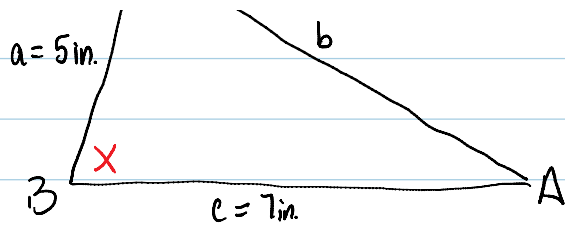
equilateral triangle



2 triangles are similar if any 2 of the 3 corresponding angles are congruent (same in size and shape)

Ex. #3, length of n ?





- confirm that the triangles are similar, then use proportion to solve for n .

$$\angle C = \angle N$$

$$\angle B = \angle M$$

... therefore triangles are similar and we can state that

$$\triangle ABC \sim \triangle LMN$$

- solve for n

$$\frac{a}{l} = \frac{c}{n} \Rightarrow \frac{5}{2} = \frac{7}{n}$$

$$5n = 14$$

$$n = \boxed{2.8 \text{ in.}}$$