

**DO NOW**

A 12 foot tree casts a 16 foot shadow. How many feet tall is a nearby tree that casts a 20 foot shadow?



tree  
shadow,  $\frac{12}{16} = \frac{X}{20}$

$$16X = 240$$

$$X = 15 \text{ ft}$$

Feb 18-7:27 AM

Similar Polygons

All pairs of corresponding angles  
are congruent

AND

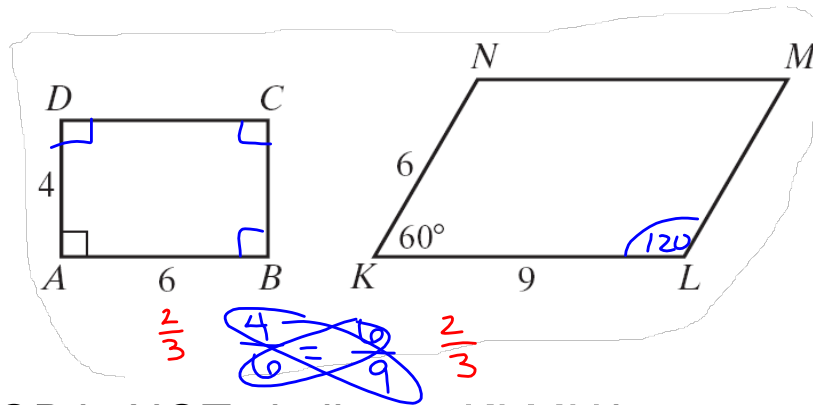
Corresponding sides are in proportion

(same ratio)

Symbol for "similar" is ~

Feb 18-10:26 AM

Are these two figures similar?

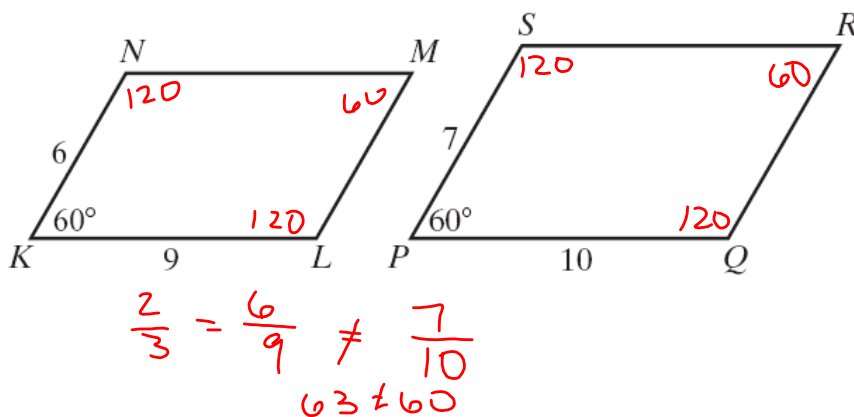


$ABCD$  is NOT similar to  $KLMN$  because...

corresponding angles are not the same

Feb 18-10:32 AM

Are these two figures similar?

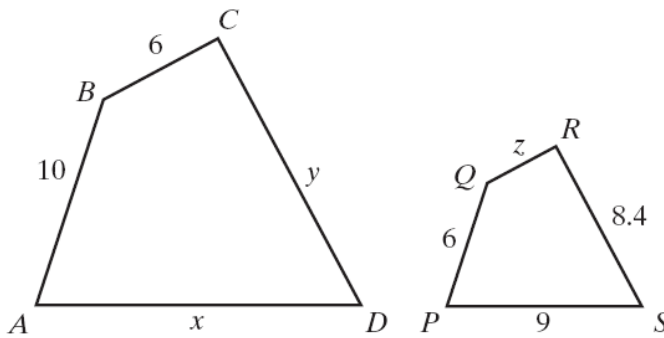


$KLMN$  is NOT similar to  $PQRS$  because...

corresponding sides do not have the same ratio

Feb 18-10:34 AM

If  $ABCD \sim PQRS$ , find the values of  $x$ ,  $y$  and  $z$



$$\frac{x}{9} = \frac{10}{6}$$

$$6x = 90$$

$$x = 15$$

$$\frac{10}{6} = \frac{y}{8.4}$$

$$6y = 84$$

$$y = 14$$

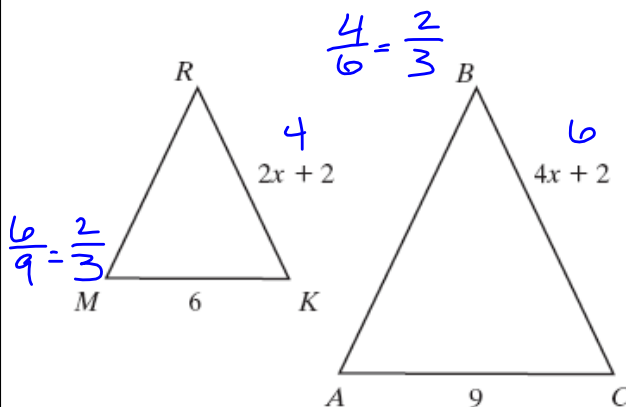
$$\frac{2}{6} = \frac{6}{10}$$

$$10z = 36$$

$$z = 3.6$$

Feb 18-10:46 AM

If  $\triangle MRK \sim \triangle ABC$ , what is the length of  $\overline{BC}$ ?



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

~~$$\frac{2x+2}{6} = \frac{4x+2}{9}$$~~

$$18x + 18 = 24x + 12$$

$$-18x \quad -18x$$

$$18 = 6x + 12$$

$$-12 \quad -12$$

$$6 = 6x$$

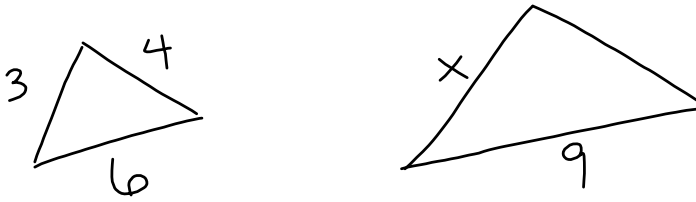
$$1 = x$$

$$BC = 4(1) + 2$$

$$BC = 6$$

Feb 18-10:45 AM

The sides of a triangle are 3, 4 and 6. Find the length of the shortest side of a similar triangle whose longest side is 9.



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

$$6x = 27$$

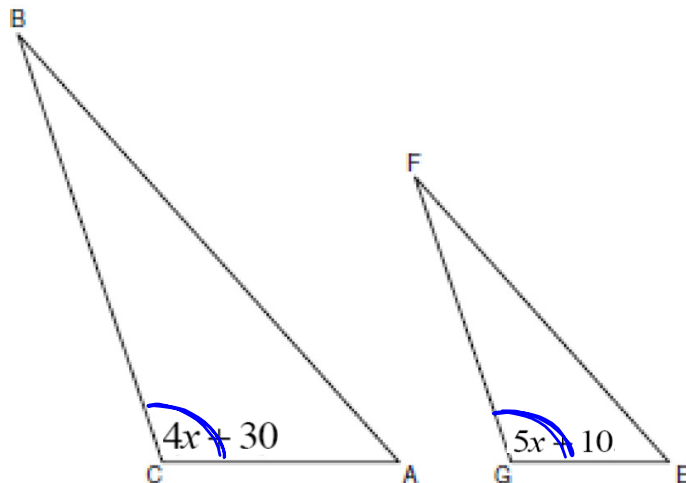
$$x = \frac{27}{6} = \frac{9}{2} = \boxed{4.5}$$

Mar 8-6:57 AM

In the diagram below,  $\triangle ABC \sim \triangle EFG$ ,  $m\angle C = 4x + 30$ , and  $m\angle G = 5x + 10$ . Determine the value of  $x$ .

$$4x + 30 = 5x + 10$$

$$\boxed{20 = x}$$



Feb 18-10:56 AM