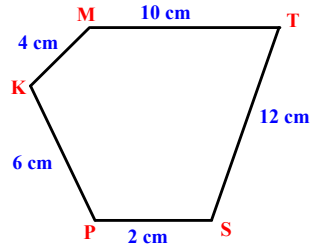
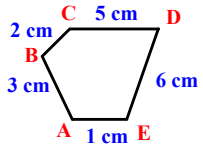
6.4. Similar Figures

March 19, 2007

- Similar Figures: figures that have the same shape but different sizes.

Example:





$PKMTS \sim ABCDE$

$\sim$ = similar

$m\angle P = m\angle A$
$m\angle K = m\angle B$
$m\angle M = m\angle C$
$m\angle T = m\angle D$
$m\angle S = m\angle E$

Corresponding Parts

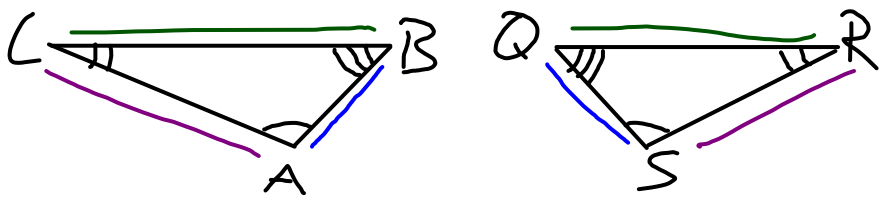
Corr. $\angle$'s of $\sim$ polygons are $=/\cong$

$$\frac{PK}{AB} = \frac{KM}{BC} = \frac{MT}{CD} = \frac{ST}{FD} = \frac{PS}{AE}$$

$$2 = 2 = 2 = 2 = 2$$

Two polygons are similar if their corresponding angles have the same measure and the measure of their corresponding sides are in proportion

ex2



Tell Me the Corr. Parts.

Angles

$m\angle A = m\angle S$

$m\angle B = m\angle Q$

$m\angle C = m\angle R$

Sides

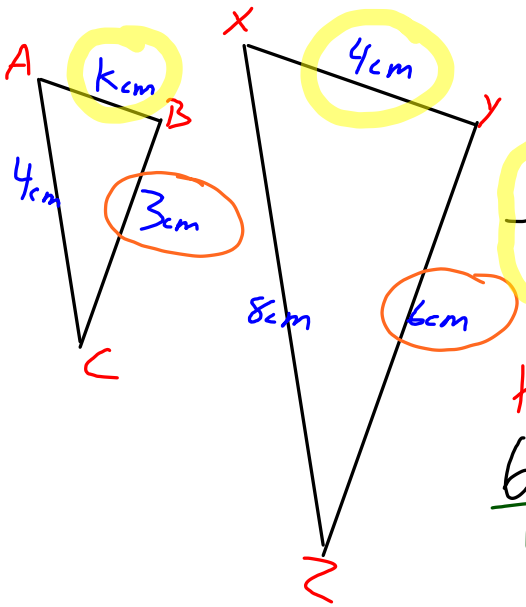
$\frac{AB}{SQ}$ $\frac{AC}{SR}$ $\frac{CB}{RQ}$

Make a Corr. Statement.

$\triangle ACB \sim \triangle SRQ$

or

$\triangle ABC \sim \triangle SQR$ ...



find k

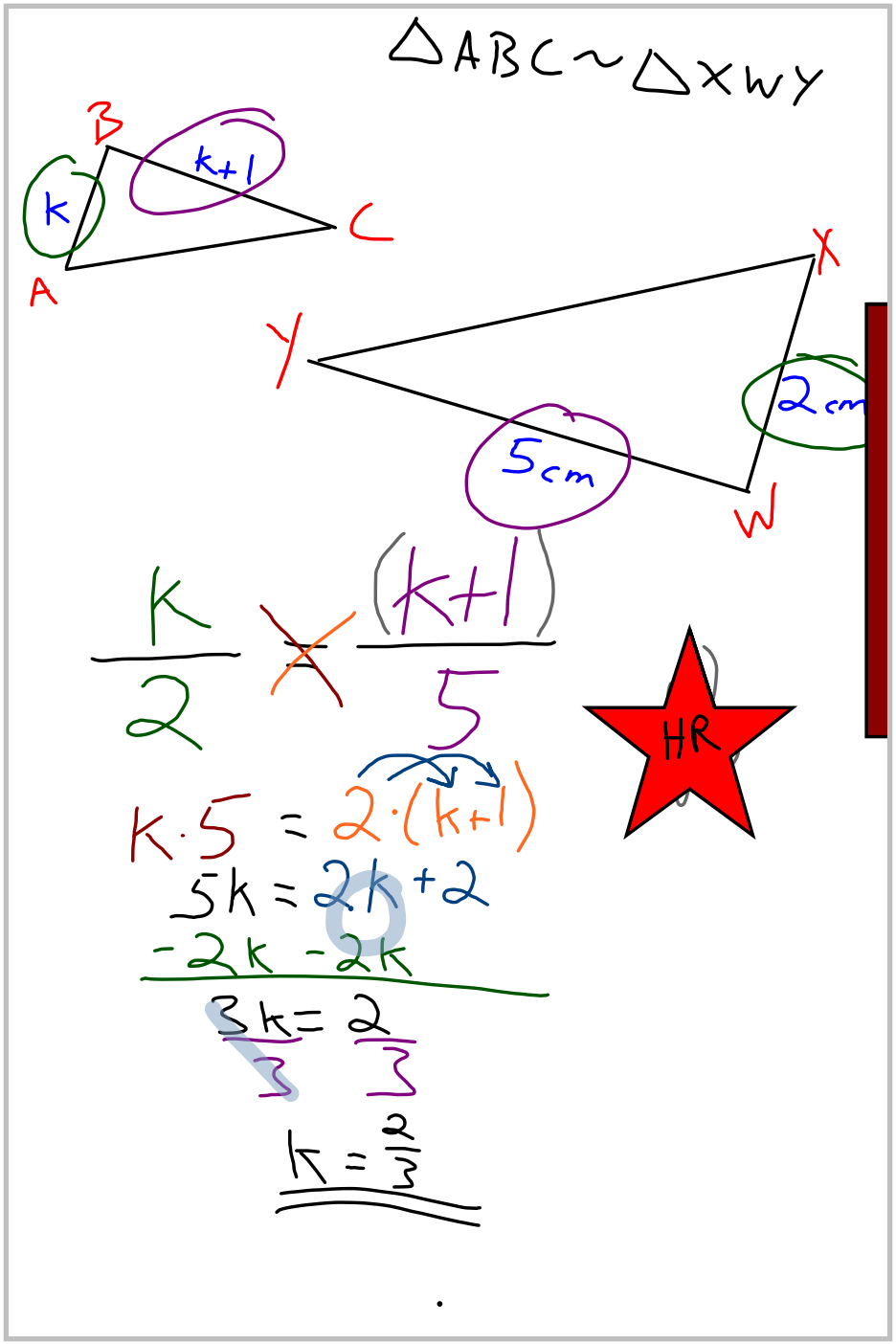
Set up a Pro.

$\frac{k}{4} = \frac{3}{6}$

$k \cdot 6 = 4 \cdot 3$

$\frac{6k}{6} = \frac{12}{6}$

$k = 2\,cm$



$$\frac{k}{2} = \frac{(k+1)}{5}$$

$$k \cdot 5 = 2 \cdot (k+1)$$

$$5k = 2k + 2$$

$$-2k \quad -2k$$

$$3k = 2$$

$$\frac{3k}{3} = \frac{2}{3}$$

$$k = \frac{2}{3}$$

O.T.L.

Pg 189: 1-5 all

9, 11, 12, 13, 14