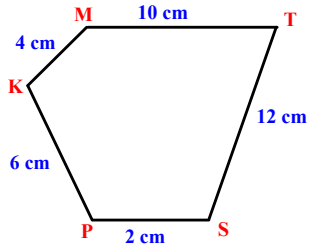
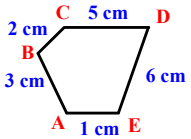
6.4. Similar Figures

March 19, 2007

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

Example:





$PKMTS \sim ABCDE$ ~ = 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. ∠'s of ~ polygons are = / ≅

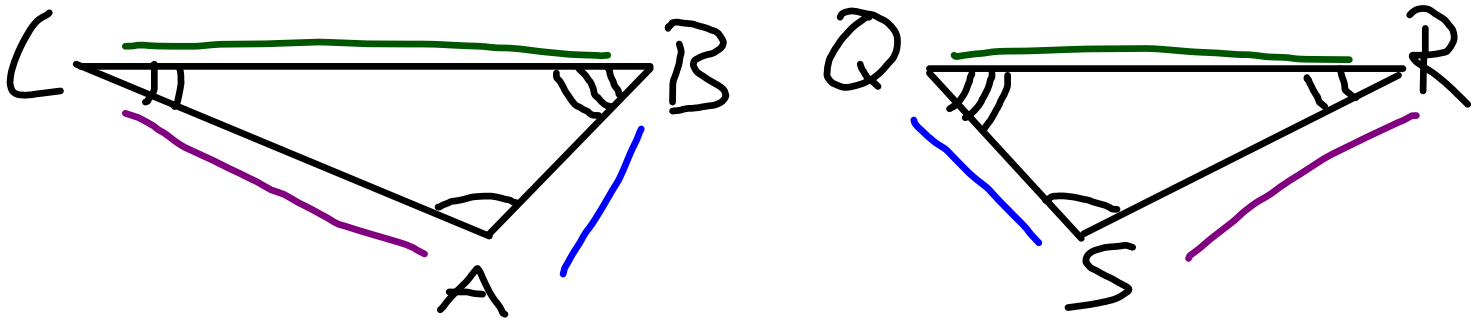
$$\frac{PS}{AE} = \frac{MT}{CD} = \frac{TS}{DE} = \frac{MK}{CB} = \frac{KP}{BA}$$

$2 = 2 = 2 = 2 = 2$

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

ex 2 Make a sim. Statement.

$\triangle ABC \sim \triangle SQR$



Tell Me the Corr. Parts.

Angles

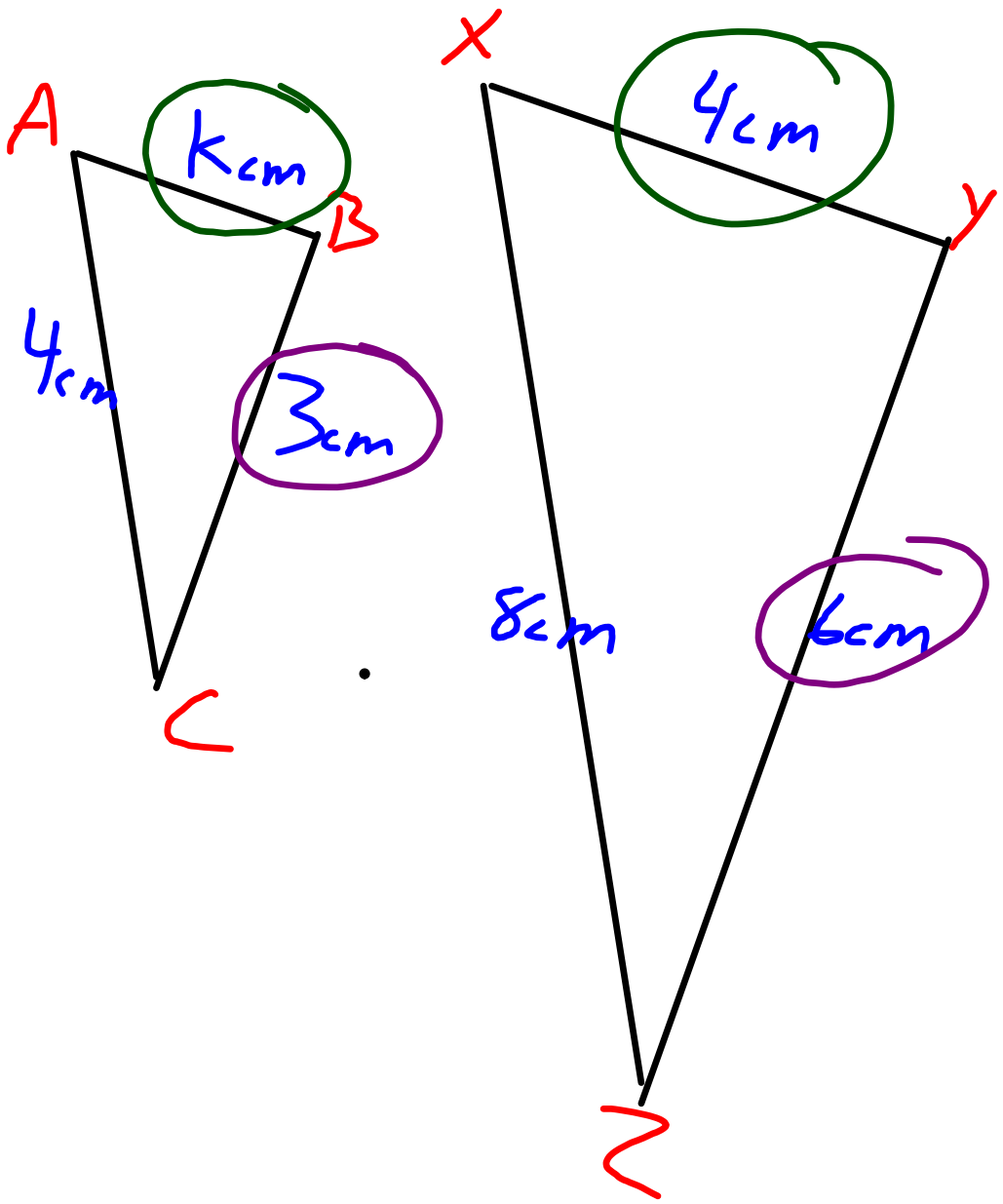
$m\angle A = m\angle S$

$m\angle B = m\angle Q$

$m\angle C = m\angle R$

Sides

$$\frac{AB}{SQ} = \frac{BC}{QR} = \frac{AC}{SR}$$



find k

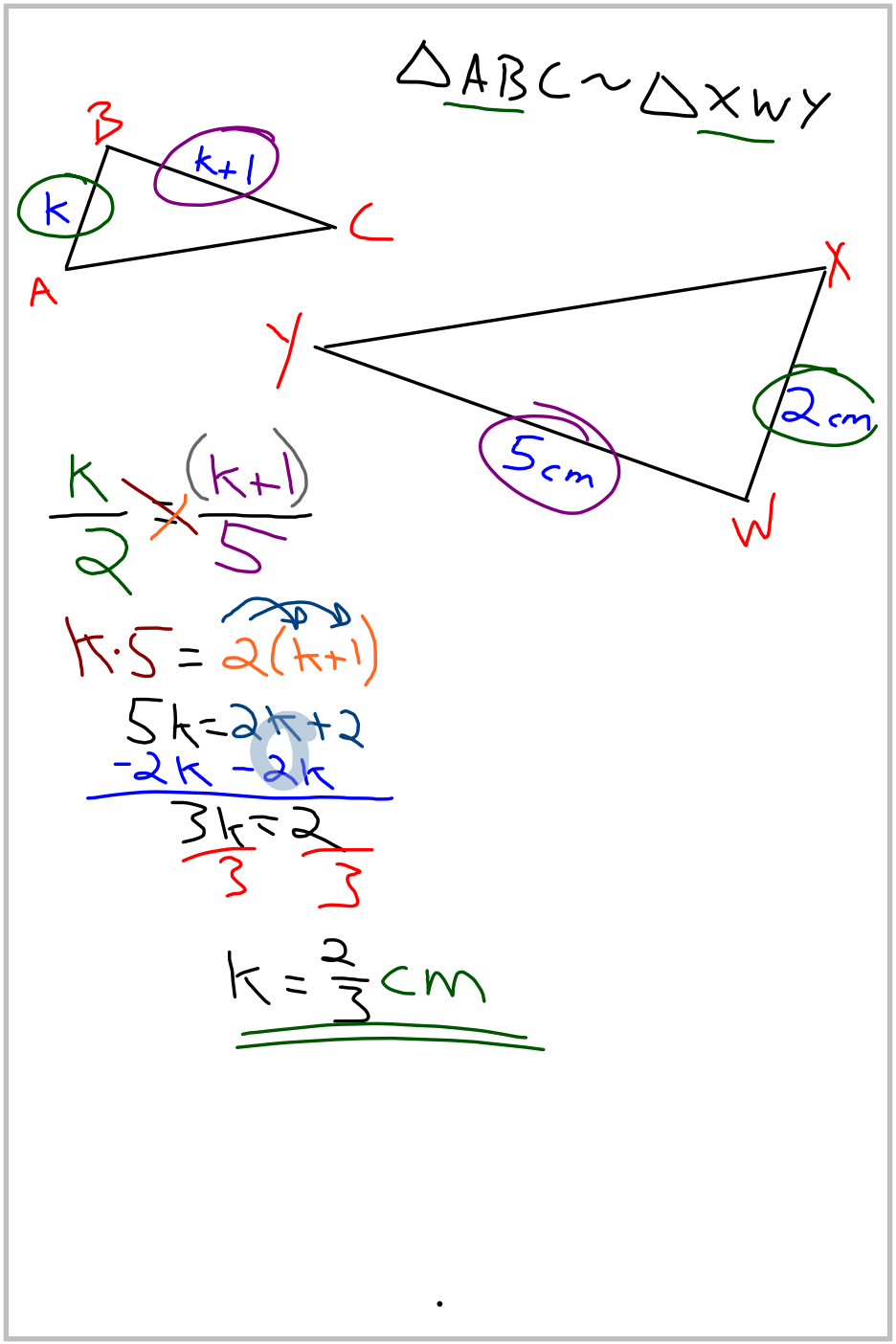
Set up a Pro.

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

$$k \cdot 6 = 4 \cdot 3$$

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

$$k = 2 \text{ cm}$$


△ABC ~ △XWY
B
k+1
k
C
A
X
Y
2 cm
5 cm
W
k/2 = (k+1)/5
k·5 = 2(k+1)
5k = 2k + 2
-2k -2k
3k = 2
3 3
k = 2/3 cm

O.T.L.

Pg 189: 1-5 all

9, 11, 12, 13, 14