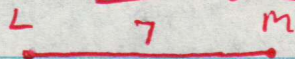
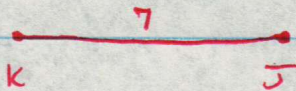


5.2 Congruent Polygons

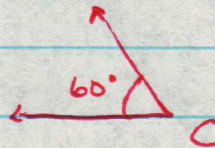
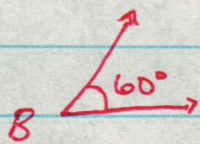
Congruent Line Segment: Equal Length



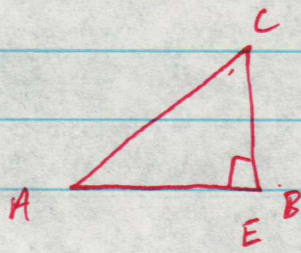
$$LM \cong KJ$$



Congruent Angles: Equal Angle Measure.



Congruent Polygon: All Corresponding Sides + Angles Are Equal.



Sides:

$$\overline{AB} \cong \overline{DF}$$

$$\overline{BC} \cong \overline{FE}$$

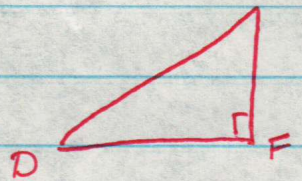
$$\overline{CA} \cong \overline{ED}$$

Angles:

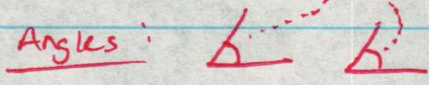
$$\angle A \cong \angle D$$

$$\angle B \cong \angle F$$

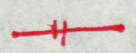
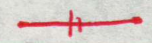
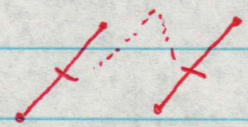
$$\angle C \cong \angle E$$



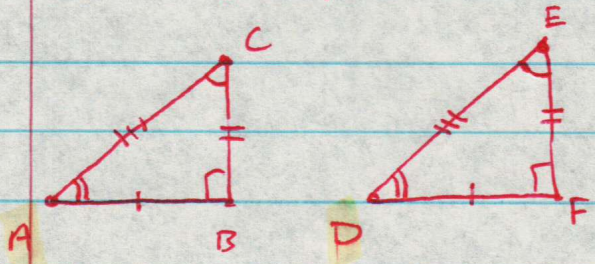
Congruence Markers:



Line Segments:



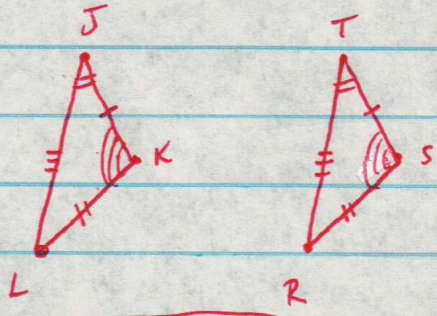
So... to make markings to show congruent polygons this is what you do...



$$\triangle ABC \cong \triangle DFE \quad \text{order of the letters matters!}$$

Each letter is corresponding!

Ex: Identify all corresponding Parts ← Sides And Angles



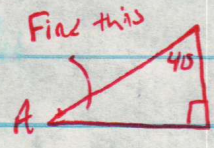
$\angle J \cong \angle T$ $\overline{JK} \cong \overline{TS}$
 $\angle S \cong \angle K$ $\overline{KL} \cong \overline{SR}$
 $\overline{LJ} \cong \overline{RT}$
 All 6 Parts! ☺

How to know if $\angle L$ & $\angle R$ are congruent.

$\angle J + \angle K + \angle L = 180^\circ$
 same same
 \downarrow \downarrow
 $\angle T + \angle S + \angle R = 180^\circ$

The Third Angle Must be congruent.

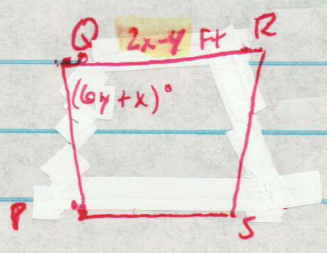
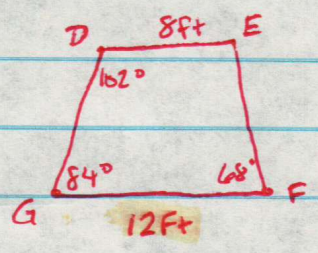
Side Ex:



$90^\circ + 40^\circ + \angle A = 180^\circ$
 $130^\circ + A = 180^\circ$
 $\angle A = 50^\circ$

So $\angle L \cong \angle R$

Ex Solve for x & y.



Given: $DEFG \cong SPQR$

Start by solving for letter by itself. x in this case

$2x - 4 = 12$

+4 +4

$\frac{2x}{2} = \frac{16}{2}$

$x = 8$

Now find y.

$y = 10$

plug in x.

$6y + x = 68^\circ$
 $6y + 8 = 68$
 $6y = 60$

HW: Pg 219

#s 3-10, 13-14