<name>
Class: Honors Geometry
Date: <date>
Topic: Lesson 4-1 (Congruent Figures)

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Congruent Figures	Same size & shape…exact match
Congruent Polygons	All corresponding parts are congruent. …all corresponding angles and sides.
Naming Congruent Parts	Named vertices must be in order…corresponding match up. If $TJD \cong RCF$ $\angle T \cong \angle R, \angle J \cong \angle C \,\&\, \angle D \cong \angle F$ And $$\overline{TJD} \cong \overline{RCF} \quad \overline{TJ} \cong \overline{RC}, \overline{JD} \cong \overline{CF} \,\&\, \overline{TD} \cong \overline{RF}$$

Example	Pg 182, Prob #2
	     Angles: $\angle EFG \cong \angle HIJ, \angle FGE \cong \angle IJH, \angle GEF \cong \angle JHI$
	     Sides: $\overline{EF} \cong \overline{HI}, \overline{FG} \cong \overline{IJ}, \overline{GE} \cong \overline{JH}$

Example	Pg 182, Problems #4-12 even
	     4. $\overline{KJ} \cong \overline{CM}$
	     6. $\angle L \cong \angle B$
	     8. $\angle M \cong \angle J$
	     10. $\triangle KBJ \cong \triangle CLM$
	     12. $\triangle JKB \cong \triangle MCL$

Theorem 4-1	If 2 $\angle 's$ of one $\triangle$ are $\cong$ to 2 $\angle 's$ of diff $\triangle$, then 3rd $\angle 's$ are $\cong$

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Example

$\triangle TRK \, and \, TUK \ldots$ the triangles share a side…

First, list corresponding angles.
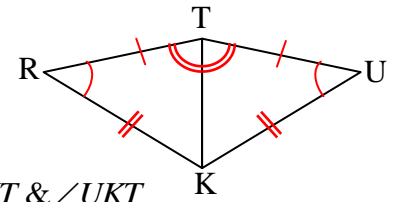
$\angle RTK \, \& \, \angle UTK, \angle R \, \& \, \angle U, \angle RKT \, \& \, \angle UKT$

Now list corresponding sides: $\overline{TR} \, \& \, \overline{TU}, \; \overline{RK} \, \& \, \overline{UK}, \; \overline{TK} \, \& \, \overline{TK}$

Now determine if all corresponding parts are congruent. By markings and the reflexive property of congruence ($\overline{TK} \cong \overline{TK}$), we see that:

$\angle RTK \cong \angle UTK, \angle R \cong \angle U$ and $\overline{TR} \cong \overline{TU}, \overline{RK} \cong \overline{UK}, \overline{TK} \cong \overline{TK}$

Using Theorem 4-1: since $\angle RTK \cong \angle UTK, \angle R \cong \angle U$ we can say $\angle RKT \cong \angle UKT$!

Thus $\triangle TRK \cong TUK$ QED.

Example

Pg 183, #26
Using the markings provided in the diagram:

Sides: There is no information given in the diagram that allows us to determine congruent sides.

Thus, we can't conclude the triangles are congruent.