



**Tuesday, October 16, 2012**

No TISK or Mental Math problems this week.

Homework:

p. 199-200 #9, 10, 12, 24, 27-29all, 30-34even

# 4-1 & 4-2 Worksheet Check

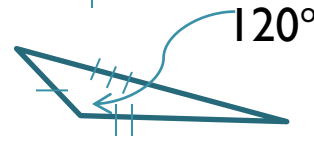
1-6 are sample answers:



2)



4)



6)



7)  $\overline{AB}, \overline{BC}, \overline{AC}$

8)  $\angle A, \angle B, \text{ \& } \angle ACB$

9)  $\angle ACB$

10)  $\angle A \text{ \& } \angle B$

11)  $\overline{AB}$

12)  $\overline{BC} \text{ \& } \overline{AC}$

13)  $\angle B$

# 4-1 & 4-2 Worksheet Check

14) 61

15) 20

16) 55

17) 112

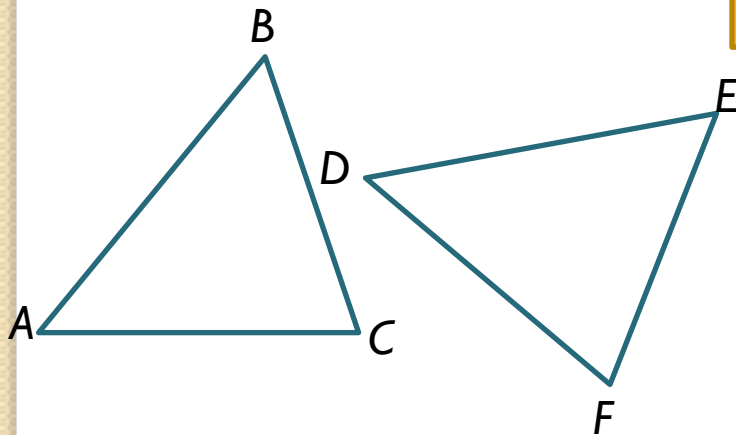
18) 112 -  $m\angle 3$  (\*this is different than 9A saw!)

19) 112 -  $m\angle 2$

20)  $m\angle E = 81^\circ$ ,  $m\angle D = 27^\circ$ ,  $m\angle F = 72^\circ$

# §4-3 Exploring Congruent Triangles

- Congruent means “having the same shape and size”.
- So what would it take for two triangles to be congruent?
  - All the angles are congruent.
  - All the sides are congruent.



$$\triangle ABC \cong \triangle DEF \Leftrightarrow$$

$$\begin{array}{l} \angle A \cong \angle D, \angle B \cong \angle E, \angle C \cong \angle F, \\ \overline{AB} \cong \overline{DE}, \overline{BC} \cong \overline{EF}, \overline{AC} \cong \overline{DF} \end{array}$$

## §4-3 Exploring Congruent Triangles

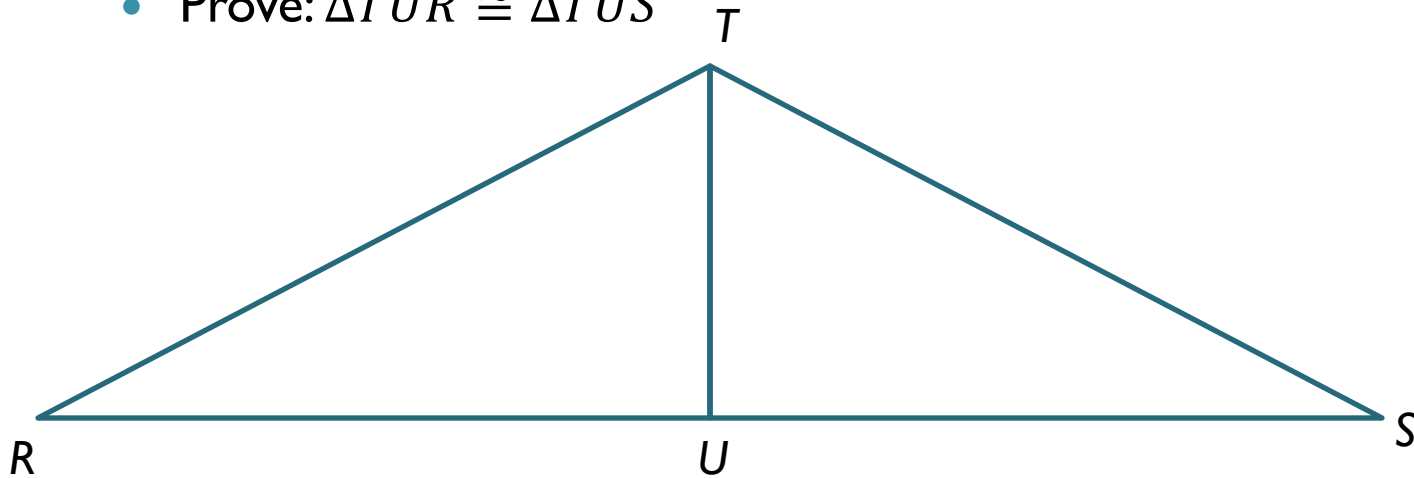
**Theorem:**

(CPCTC – Corresponding Parts of Congruent Triangles are Congruent)

**Two triangles are congruent if and only if their corresponding parts are congruent.**

# §4-3 Exploring Congruent Triangles

- Given:  $\overline{TU} \perp \overline{RS}$ ,  $\angle R \cong \angle S$ ,  $\overline{UR} \cong \overline{US}$ ,  $\overline{TR} \cong \overline{TS}$
- Prove:  $\triangle TUR \cong \triangle TUS$



Plan for Proof: Show all three pairs of angles and all three pairs of sides are congruent

If  $\perp \Rightarrow$  4 rt  $\angle$ s

$\angle R \cong \angle S$  (G)

$\overline{UR} \cong \overline{US}$  (G)

$\perp$   
(G)

$\rightarrow$  4 rt.  $\angle$ s

$\angle TUR \cong \angle TUS$

$\overline{TR} \cong \overline{TS}$  (G)

Rt.  $\angle$ s are  $\cong$

3rd  $\angle$ s Th.

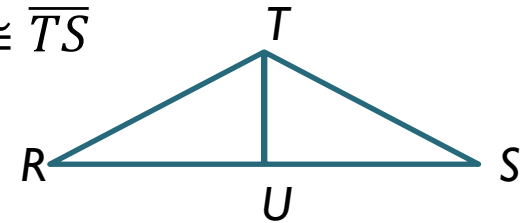
$\overline{TU} \cong \overline{TU}$

(Reflexive)

$\angle RTU \cong \angle STU$

# §4-3 Exploring Congruent Triangles

- Given:  $\overline{TU} \perp \overline{RS}$ ,  $\angle R \cong \angle S$ ,  $\overline{UR} \cong \overline{US}$ ,  $\overline{TR} \cong \overline{TS}$
- Prove:  $\Delta TUR \cong \Delta TUS$



Statement	Reason
1) $\overline{TU} \perp \overline{RS}$ , $\angle R \cong \angle S$ , $\overline{UR} \cong \overline{US}$ , $\overline{TR} \cong \overline{TS}$	1) Given
2) $\angle TUR$ & $\angle TUS$ are rt. $\angle$ s	2) If lines are $\perp \Rightarrow$ they form 4 rt $\angle$ s
3) $\angle TUR \cong \angle TUS$	3) Right Angle Theorem
4) $\angle RTU \cong \angle STU$	4) 3 <sup>rd</sup> Angles Theorem
5) $\overline{TU} \cong \overline{TU}$	5) Reflexive Prop. of Segment $\cong$
6) $\Delta TUR \cong \Delta TUS$	6) If corresponding parts are $\cong$ then 2 $\Delta$ s are $\cong$

## §4-3 Exploring Congruent Triangles

- Congruence of Triangles is Symmetric, Reflexive and Transitive
- Symmetric Property of  $\cong$   $\Delta$ s:
  - If  $\Delta ABC \cong \Delta DEF \Rightarrow \Delta DEF \cong \Delta ABC$
- Reflexive Property of  $\cong$   $\Delta$ s:
  - If  $\Delta ABC$  exists  $\Rightarrow \Delta ABC \cong \Delta ABC$
- Transitive Property of  $\cong$   $\Delta$ s:
  - If  $\Delta ABC \cong \Delta DEF$  and  $\Delta DEF \cong \Delta GHI$   
 $\Rightarrow \Delta ABC \cong \Delta GHI$



# Homework



- p. 199-200

#9, 10, 12, 24, 27-29all, 30-34even

