Geometry- Mrs. Tilus
Unit 4-Worksheet #3: Prove Triangles Congurent

Name: Key

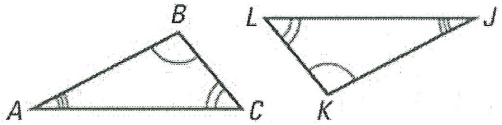
Tell whether the angles or sides are corresponding angles, corresponding sides or neither.

1. $\angle C$ and $\angle L$

Corresponding Angles

2. $\overline{AC}$ and $\overline{JK}$

Neither



3. $\overline{BC}$ and $\overline{KL}$

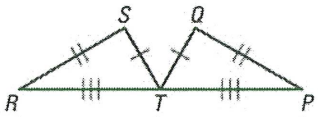
Corresponding Sides

4. $\angle B$ and $\angle L$

Neither

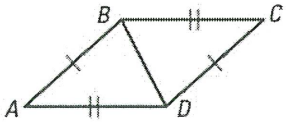
Decide whether the congruence statement is true. **Explain your reasoning.**

5. $\triangle RST \cong \triangle TQP$



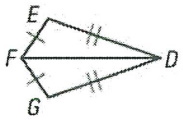
Not True; why?

6. $\triangle ABD \cong \triangle CDB$



True; why?

7. $\triangle DEF \cong \triangle DGF$

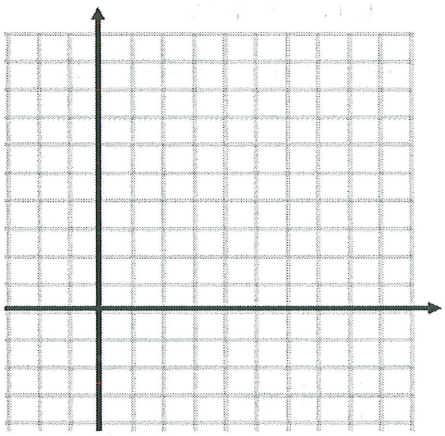


True; why?

8. Use the given coordinates to determine if $\triangle ABC \cong \triangle DEF$. **Explain your reasoning.** * Show work *

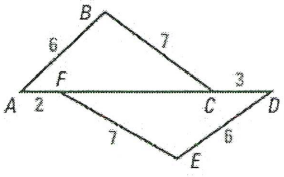
$A(-2,1), B(3,-3), C(7,5);\ D(3,6), E(8,2), F(10,11)$

Not Congruent: $\triangle ABC \ncong \triangle DEF$



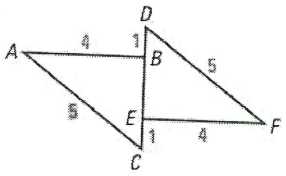
Determine whether $\triangle ABC$ and $\triangle DEF$ are congruent. If they are congruent, write a congruent statement. **Explain your reasoning.**

9.



Not Congruent

10.

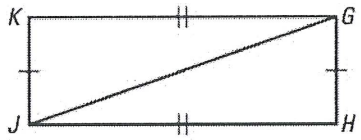


Not Congruent

11. Prove.

Given: $\overline{GH} \cong \overline{JK}, \overline{HJ} \cong \overline{KG}$

Prove: $\triangle GHJ \cong \triangle JKG$

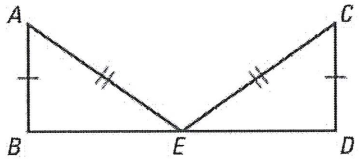


Statement	Reason
1. $\overline{GH} \cong \overline{JK}$ $\overline{HJ} \cong \overline{KG}$	1. Given
2. $\overline{GJ} \cong \overline{JG}$	2. Reflexive Property
3. $\triangle GHJ \cong \triangle JKG$	3. SSS

12. Prove.

Given: $\overline{AE} \cong \overline{CE}, \overline{AB} \cong \overline{CD}$
E is the midpoint of $\overline{BD}$

Prove: $\triangle EAB \cong \triangle ECD$

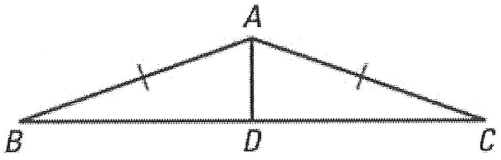


Statement	Reason
1. $\overline{AE} \cong \overline{CE}$ $\overline{AB} \cong \overline{CD}$	1. Given
2. E is the midpoint of $\overline{BD}$	2. Given
3. $\overline{BE} \cong \overline{DE}$	3. Def^n of a Midpoint
4. $\triangle EAB \cong \triangle ECD$	4. SSS

13. Prove.

Given: $\overline{AB} \cong \overline{AC}$, $\overline{AD}$ bisects $\overline{BC}$

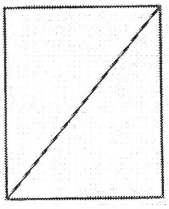
Prove: $\triangle ABD \cong \triangle ACD$



Statement	Reason
1. $\overline{AB} \cong \overline{AC}$	1. Given
2. $\overline{AD}$ bisects $\overline{BC}$	2. Given
3. $\overline{BD} \cong \overline{CD}$	3. Def^n of Segment Bisector
4. $\overline{AD} \cong \overline{AD}$	4. Reflexive Property
5. $\triangle ABD \cong \triangle ACD$	5. SSS

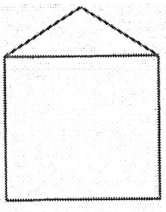
Decide whether the figure is stable. **Explain your reasoning.**

14.



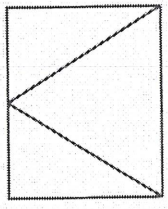
Stable

15.



Not Stable

16.



Stable