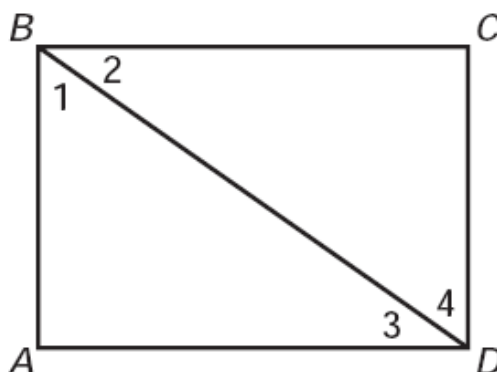**Name:** _____

Congruent Triangles

Exercise 1: Given: $\angle 1 \cong \angle 4, \angle ABC$ and $\angle CDA$ are right angles.

a)   Write a congruence statement for the triangles in the diagram.
b)   Write a two – column proof of your statement in part (a).

Exercise 2: Do you think there is an AAA Postulate or Theorem for congruent triangles? Explain why or why not.

Exercise 3: Supply the missing statements and reasons
Given: $\overline{RS} \perp \overline{ST}$; $\overline{TU} \perp \overline{ST}$; V is the midpoint of $\overline{ST}$
Prove: $\triangle RSV \cong \triangle UTV$
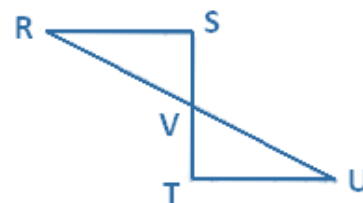
Statements	Reasons
1. $\overline{RS} \perp \overline{ST}$; $\overline{TU} \perp \overline{ST}$	1. ??
2. $m\angle S = 90°; m\angle \_\_\_\_ = 90°$	2. ??
3. $\angle S \cong \angle T$	3. ??
4. V is the midpoint of $\overline{ST}$	4. ??
5. $\overline{SV} \cong$ ____	5. ??
6. $\angle RVS \cong \angle$ _____	6. ??
7. $\triangle$____ $\cong \triangle$ _____	7. ??

Exercise 4: According to math legend, the Greek mathematician Thales (ca. 625–547 B.C.E.) could tell how far out to sea a ship was by using congruent triangles. First, he marked off a long segment in the sand. Then, from each endpoint of the segment, he drew the angle to the ship. He then re-measured the two angles on the other side of the segment away from the shore. The point where the rays of these two angles crossed located the ship. What congruence conjecture was Thales using? Explain.