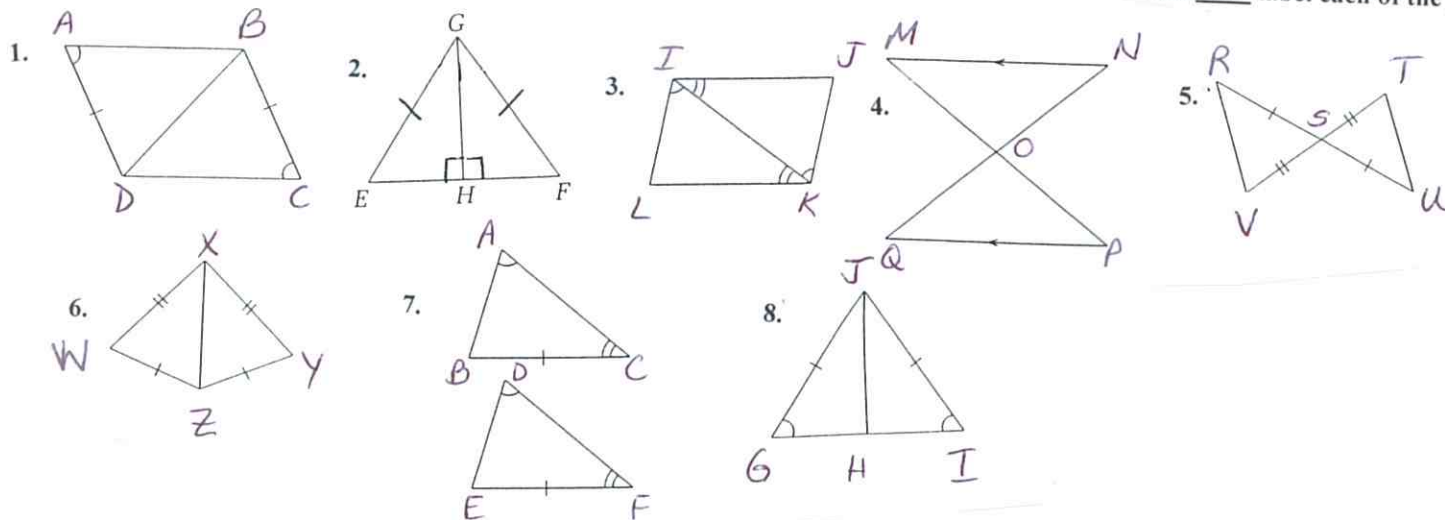### STUDY GUIDE 4.1 – 4.6

For 1 – 8:   a) Can any other sides or angles be marked $\cong$? If so, why? (write the theorem, postulate, etc.)
b) Can the Δ 's be proven $\cong$? If so, write the congruence statement. (ex: $\Delta EFG \cong \Delta PQR$)

   c) If the $\Delta's$ are $\cong$, then state if **SSS, SAS, ASA, AAS,** or **HL** would be used to prove it.
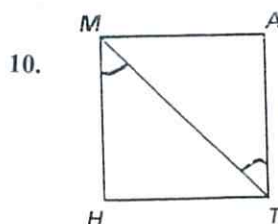
   **You must label each of the parts.

1.

2.

3.

4.

5.

6.

7.

8.

Aside from vertical angles, reflexive sides, 3rd angle pairs, what else would you need to know (NTK) to prove the $\Delta's \cong$ by the reason given? Respond with $\cong$ statements; don't just tick mark the figure.
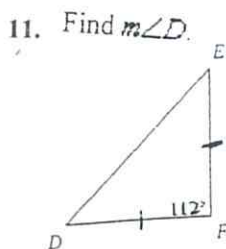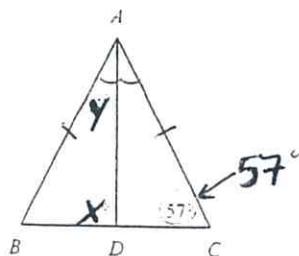
9.

   a) HL

   b) AAS
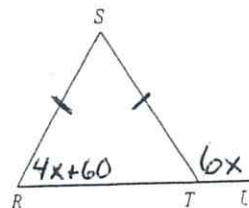
10.

   b) ASA
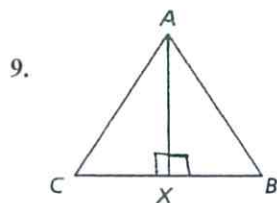
   c) SAS

For 11-15, set up and solve an algebraic equation. Show all work.

11. Find $m\angle D$.

12. Find the values of x and y.

13. Find the value of x.

14. What is the measure of a base angle of an isosceles triangle if the vertex angle measures $32°$?

Draw and label a diagram first.

15. What is the measure of the vertex angle of an isosceles triangle if one of its base angles measures $46°$?

Draw and label a diagram first.