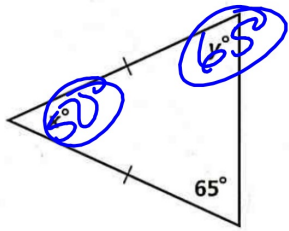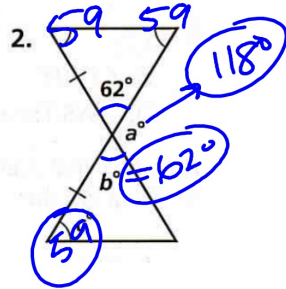For 1 – 2, find the value measure of the variables.

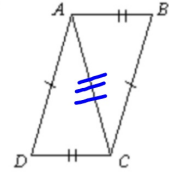**1.**
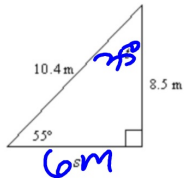
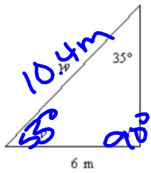**2.**

(handwritten on #1: 65, 50)

(handwritten on #2: 59, 59, 118, a°, b° = 62°, 59)

62°
65°

---

3. Use the information given in the diagram. Tell **why** each statement is true.

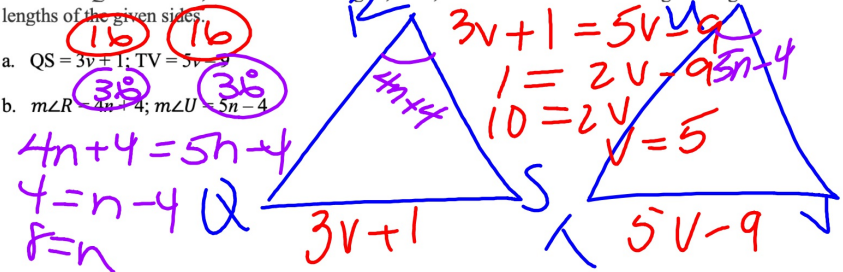a. $AC \cong AC$ ___Refl. Prop.___

b. $AD \cong BC$ ___Given___

(diagram with points A, B, C, D)

---

4. The two triangles are congruent. Find the missing side lengths and the missing angle measures.

(triangle with 10.4 m, 35°, w°, 6 m)

(triangle with 10.4 m, 8.5 m, 55°, t°)

$s =$ __6m__ $v =$ __53°__

$t =$ __35°__ $u =$ __90°__

$w =$ __10.4m__

(handwritten: 6m, 6m)

---

5. Given $\triangle QRS \cong \triangle TUV$, draw the two triangles, label, and find the measure of the given angles and the lengths of the given sides.

a. $QS = 3v + 1$; $TV = 5v - 9$

b. $m\angle R = 4n + 4$; $m\angle U = 5n - 4$

(handwritten work:)

16   16

38   38

$4n + 4 = 5n - 4$
$4 = n - 4$
$8 = n$

$3v + 1 = 5v - 9$
$1 = 2v - 9$ $-5n - 4$
$10 = 2v$
$v = 5$

(handwritten triangles labeled R, S, Q with 3v+1, 4n+4, and T, V with 5v-9)

6. Fill in the following congruence statement.

$\triangle CBA \cong$ **△PNM**

(diagram with points N, M, C on top and P, A, B on bottom)
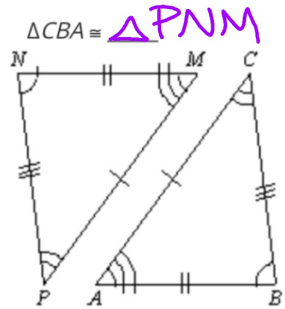
6. On the diagram, two sides are marked. Mark the angle that is considered the **included angle** in relation to these two sides.

An included ∠ is formed by two rays an∠ that coincide w/ the two sides
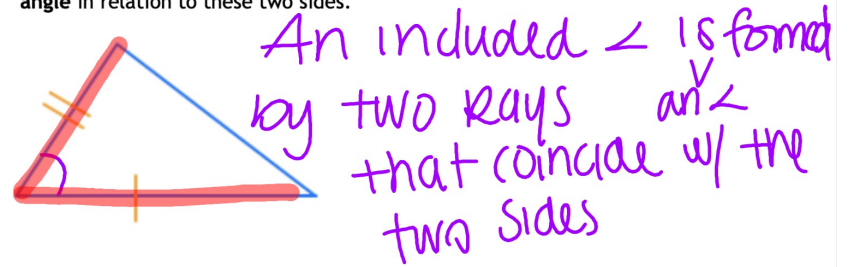
7. On the diagram, two angles are marked. Mark the side that is considered the **included side** in relation to these two angles.

The included side coincides w/ the ray shared by both ∠s.
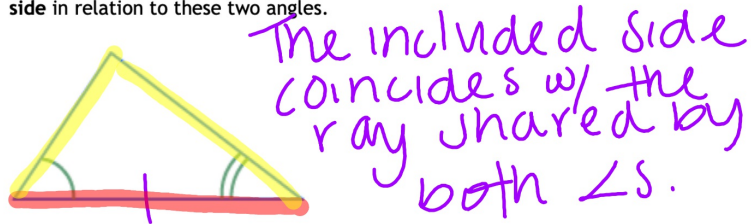
8. Put an "X" in the table to indicate which combinations of three pairs of congruent parts guarantee two triangles congruent.

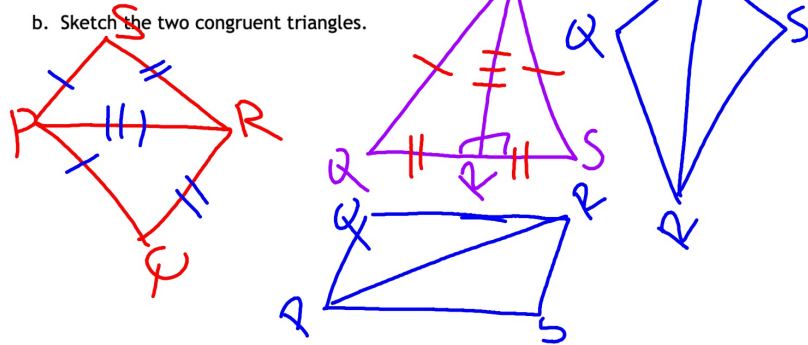|	Proves congruence	Does not prove congruence
SSS	X	
AAA		X
SAS	X	
SSA		X
ASA	X	
SAA	X	

9. **REINFORCE** Suppose ΔPQR ≅ ΔPSR.

   a. Write out the congruence statements indicating which corresponding sides of the two triangles are congruent.

   $$\overline{PQ} \cong \overline{PS} \quad \overline{PR} \cong \overline{PR}$$
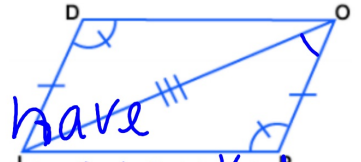 $$\overline{QR} \cong \overline{SR}$$

   b. Sketch the two congruent triangles.

   b. Add one set of tick marks to the diagram below to obtain a pattern in which the two triangles are congruent. Write out the congruence statement and indicate the congruence postulate you used.

   SSS ∴ ΔDJO ≅ ΔPOJ

   SAS ∴ ΔDJO ≅ ΔPOJ

10. **REINFORCE**

   a. Given two triangles with corresponding angles and sides as marked congruent on this diagram, why is it not possible to conclude that the two triangles are congruent?

   These two Δs have corresp ∠s & sides marked ≅ in the SSA pattern which doesnt prove ≅.