**Unit 5 #7 Triangle Congruence**



**SSS and SAS Congruence Postulates**

If 🡪 Sides are congruent and Angles are congruent then 🡪 Triangles are congruent

 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| **SIDE-SIDE-SIDE (SSS) CONGRUENCE POSTULATE** | **SIDE-ANGLE-SIDE (SAS) CONGRUENCE POSTULATE** |
| If \_\_\_\_\_\_\_\_\_\_\_\_ sides of one triangle are congruent to three \_\_\_\_\_\_\_\_\_\_\_\_\_ of a second triangle, then the two triangles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If \_\_\_\_\_\_\_ ≅ \_\_\_\_\_\_\_  \_\_\_\_\_\_\_ ≅ \_\_\_\_\_\_\_ then \_\_\_\_\_\_\_ ≅ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ ≅ \_\_\_\_\_\_\_  image2.gif                                                     0000D0C8Christine's Mac                B472C195: | If two sides and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of one triangle are congruent to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and the included angle of a second triangle, then the two triangles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. If \_\_\_\_\_\_\_ ≅ \_\_\_\_\_\_\_  \_\_\_\_\_\_\_ ≅ \_\_\_\_\_\_\_ then \_\_\_\_\_\_\_ ≅ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ ≅ \_\_\_\_\_\_\_  |



**Example 1: Using the SSS Congruence Postulate**

Prove that ΔPQW ≅ ΔTSW

|  |  |
| --- | --- |
| *STATEMENT* | *REASON* |
| 1) | 1) |
| 2) | 2) |

**Example 2: Congruent Triangles in a Coordinate Plane**

Use the SSS Congruence Postulate to show that ΔABC ≅ ΔFGH.

**Example 3: Using the SAS Congruence Postulate**

Prove that ΔAEB ≅ ΔDEC

|  |  |
| --- | --- |
| *STATEMENT* | *REASON* |
| 1) | 1) |
| 2) | 2) |
| 3) | 3) |

**Example 4: Applying Triangle Congruence Using Proofs**

**ARCHITECTURE: You are designing the window shown in the drawing. You want to make Δ *DRA* congruent to Δ *DRG*. You design the window so that $\overbar{DR}$⊥$\overbar{AG}$ and $\overbar{RA}$≅$\overbar{RG}$.

***D***

***G***

***A***

***R***

Can you conclude that Δ*DRA* ≅ Δ*DRG*?

 **Given 🡪** $\overbar{DR}$⊥$\overbar{AG}$

$\overbar{RA}$≅$\overbar{RG}$

**Prove 🡪** Δ*DRA* ≅ Δ*DRG*

|  |  |
| --- | --- |
| *STATEMENT* | *REASON* |
| 1) | 1) |
| 2) | 2) |
| 3) | 3) |
| 4) | 4) |
| 5)  | 5)  |
| 6) | 6) |