The Five Triangle Congruence Properties

We have been working on the properties that you use to prove triangles are congruent. There are 5 properties, and they are all shown below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **SSS** | **SAS** | **ASA** | **AAS** | **HL**  **(Right Triangles)** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Identify all of the congruent parts on each triangle pair, and then identify which of the 5 properties could be used to prove the triangles congruent. **If none of the properties would work, write “none.”**

|  |  |  |
| --- | --- | --- |
| 1. | 2. | 3. |
|  |  |  |
| , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |  |
| --- | --- | --- |
| 4. | 5. | 6. |
|  |  |  |
| , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |  |
| --- | --- | --- |
| 7. | 8. | 9. |
|  |  |  |
| , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

|  |  |  |
| --- | --- | --- |
| 10. | 11. | 12. |
|  |  |  |
| , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | , , &  .  To prove the triangles congruent, I  can use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Use the properties you know, including **SSS, SAS, ASA, AAS,** and **HL**, to write the proofs below.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Given:      Prove: | |  | Given: and    Prove: | |
| Statements | Reasons |  | Statements | Reasons |
|  |  |  |  |  |