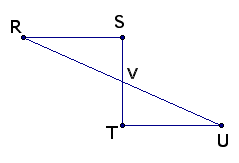
|  |  |  |
| --- | --- | --- |
| **Notes – Congruent Polygons** | **Name:** |  |
| **Standard:** | **Hour:** |

**Objective:** I can determine if two polygons are congruent by identifying all of their congruent parts. I can use the congruent parts of congruent polygons to solve for a variable and find measures.

**Definition**

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| --- |
| For two or more polygons to be considered *congruent*, \_\_\_\_\_\_\_\_ of their corresponding \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  When writing congruence statements, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_! |

**Examples**

Write all of the segment and angle congruence statements for each pair of polygons. Then write the congruence statement for each polygon.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1a.  Related image   |  |  | | --- | --- | | Segments | Angles | |  |  |   Congruence Statement:  2. List all reasons for this proof.  Given:  RS//UT, V is the midpoint of ST and RU, and RSUT  Prove: RSTUTV | 1b.     |  |  | | --- | --- | | Segments | Angles | |  |  |   Congruence Statement: |

Use the congruence statement given to mark the polygons congruent.

|  |  |
| --- | --- |
|  |  |

Use the given congruence statement to complete each blank.

|  |  |
| --- | --- |
| \_\_\_\_\_\_ \_\_\_\_\_\_  \_\_\_\_\_\_ \_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | \_\_\_\_\_\_ \_\_\_\_\_\_  \_\_\_\_\_\_ \_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_ |

**Recall – Definition**

|  |
| --- |
| Congruence means to be equal in measure. |

**Practice**

Find the indicated value using the information given.

|  |  |
| --- | --- |
| BC = \_\_\_\_\_\_\_\_\_ x = \_\_\_\_\_\_\_\_ | x = \_\_\_\_\_\_\_\_ |
| x = \_\_\_\_\_\_\_ y = \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ \_\_\_\_\_\_\_ | |

**Homework** (Th) **– Congruent Polygons** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Identify all pairs of congruent corresponding parts. Then write a different congruence statement than what is already given for the figures.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| |  |  | | --- | --- | | Segments | Angles |   Congruence Statement: | |  |  | | --- | --- | | Segments | Angles |   Congruence Statement: |

Complete each statement using the diagram provided.

|  |  |  |
| --- | --- | --- |
| 1. \_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_ |  |
| 1. \_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_ |  |
| 1. \_\_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_\_\_\_ |  |

|  |  |  |
| --- | --- | --- |
| 1. \_\_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_\_ |  |
| 1. \_\_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_ |  |
| 1. \_\_\_\_\_\_\_\_ | 1. \_\_\_\_\_\_\_\_\_ |  |

|  |  |  |  |
| --- | --- | --- | --- |
| x = \_\_\_\_\_\_\_\_ | Image result for congruent triangle   |  | | --- | | x = \_\_\_\_\_\_\_ | | y = \_\_\_\_\_\_\_ | |
| |  | | --- | | a = \_\_\_\_\_\_\_ | | b = \_\_\_\_\_\_\_ | | |  | | --- | | x = \_\_\_\_\_\_\_ | | y = \_\_\_\_\_\_\_ | |
| 1. Suppose , , , and . What is ? | |

**Algebra Challenge**

|  |  |
| --- | --- |
| What is the measure of the missing angle?  40 is the same as which expression?  40 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_ = 17x – y  Solve the system of equations you just wrote by substitution, elimination, or graphing.  Eq 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Eq 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  x = \_\_\_\_\_\_\_\_\_\_\_\_ y = \_\_\_\_\_\_\_\_\_\_\_\_  Check your answers! Plug in x and y 😊 | What is the measure of the missing angle?  Use the triangle sum theorem to write an equation for the top triangle.  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_ = 180  Solve  x = \_\_\_\_\_\_\_\_  28 is the same as which expression?  28 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Plug in the value of x to solve for y  y = \_\_\_\_\_\_\_\_ |