**Triangle Angle Sum Theorem**

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| c  a  b  b | Interior Angle:  ∠a, **∠**b and **∠** c are \_\_\_\_\_\_\_ | |
| **Activity**  Step 1: On the triangle you are provided label interior angles *A*, *B*, and *C* like the one above.  ***Note:*** *your triangle may look different from the one below.*  Step 2: Use a protractor to measure each angle. Find the sum of the three angles. List your measurements in the table:   |  |  |  |  | | --- | --- | --- | --- | | Measure of Angle A | Measure of Angle B | Measure of Angle C | Sum of Angle A, B & C | |  |  |  |  |   Step 3: If your triangle is not already cut out, please cut out your triangle.  Step 4: Tear or cut the three angles part. Example below:  B  A  C  Step 5: Rotate the angles so all vertices line up. Glue your connected angles below on the line (side by side) or on a separate piece of paper. What do you notice?  **Glue your angles here (after getting it checked by Teacher)**  Based on the triangle investigation you just completed the following statement.  **The sum of the interior angles of any triangle is \_\_\_\_\_\_\_\_\_\_\_\_\_.** | | |
| **Angle Sum Theorem**  The \_\_\_\_\_\_\_\_\_\_\_\_\_ of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of any \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is equal to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  **m ∠** \_\_\_ **+ m ∠ \_\_\_ + m ∠ \_\_\_ = 180°** | | |
| **Examples:**   1. Use the triangle sum theorem to find the measure of angle x.   x  \_\_\_\_\_\_ + \_\_\_\_\_\_ + \_\_\_\_\_\_ = \_\_\_\_\_\_\_  \_\_\_\_\_\_ + \_\_\_\_\_\_ = \_\_\_\_\_\_  x = \_\_\_\_\_\_ | | |
| 1. In a triangle the measures of two of the angles are 35° and 65°. Find the measure of the third angle. | | |
| **Practice:** Find the measure of the missing angle. | | |
| **3**)    x | | **4)**  Triangle ABC is a right triangle. The measure of angle A is 37°. Find the measures of angle B and C.  **A**  **C**  **B** |
| 5) | | 6) In a triangle the measure of two of the angles is 75° and 46°. Find the measure of the third angle. |
| 7) In triangle *DEF* the measure of angle *D* is 33 and the measure of angle *E* is 97. Find the measure of angle *F*. | | 8) |
| 9) Four ***isosceles*** triangles cap the Smith Tower in Seattle. If one of the base angles measures 65°, what are the measures of the other two angles? | | |