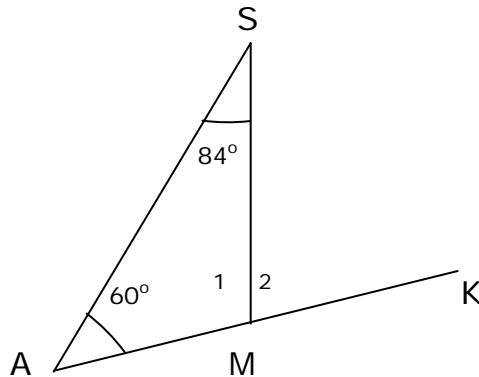


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Angle Sums and Exterior Angles of Triangles - Step-by-Step Lesson

Find the measures of $\angle 1$ and $\angle 2$ in the figure below.

**Explanation:**

What do we know?

$$m\angle S = 84^\circ$$

$$m\angle A = 60^\circ$$

Now, we can solve for $m\angle 1$ by using the Triangle Angle Sum Theorem.

So we have:

$$m\angle S + m\angle A + m\angle 1 = 180^\circ$$

$$84^\circ + 60^\circ + m\angle 1 = 180^\circ$$

$$144^\circ + m\angle 1 = 180^\circ$$

$$m\angle 1 = 36^\circ$$

In order to solve for the measure of $\angle 2$, we will need to apply the Exterior Angle. We know that the two remote interior angles in the figure are $\angle S$ and $\angle A$. The sum of the exterior angles is equal to the measure of the exterior angle. We have



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$$m\angle S + m\angle A = m\angle 2$$

$$84 + 60 = m\angle 2$$

$$144 = m\angle 2$$

we know that the sum of $\angle 1$ and $\angle 2$ must be 180.

Let's check to make sure:

Line AMK appears to be a straight line.

$$m\angle 1 + m\angle 2 = 180$$

$$144 + 36 = 180$$

