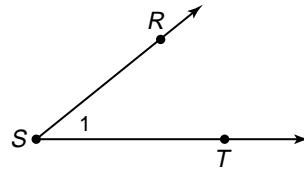


Study Guide

Exploring Angles

An angle is formed by two noncollinear rays with a common endpoint. You could name the angle in the figure at the right as $\angle S$, $\angle RST$, $\angle TSR$, or $\angle 1$.



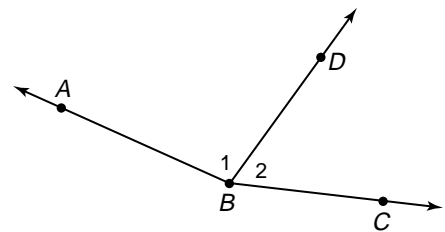
When two or more angles have a common vertex, you need to use either three letters or a number to name the angles. Make sure there is no doubt which angle your name describes.

A **right angle** is an angle whose measure is 90. Angles smaller than a right angle are **acute angles**. Angles larger than a right angle are **obtuse angles**. A **straight angle** has a measure of 180.

According to the Angle Addition Postulate, if D is in the interior of $\angle ABC$, then $m\angle ABD + m\angle DBC = m\angle ABC$.

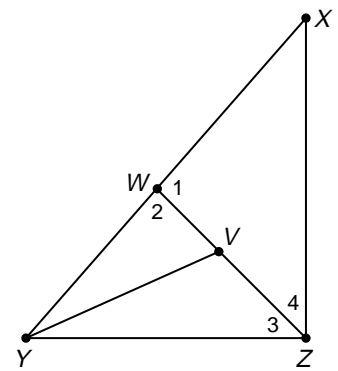
Example: In the figure at the right,
 $m\angle ABC = 160$, $m\angle 1 = x + 14$, and
 $m\angle 2 = 3x - 10$. Find the value of x .

$$\begin{aligned} m\angle 1 + m\angle 2 &= m\angle ABC \\ (x + 14) + (3x - 10) &= m\angle ABC \\ 4x + 4 &= 160 \\ 4x &= 156 \\ x &= 39 \end{aligned}$$



For Exercises 1–5, refer to the figure at the right.

- Do $\angle 3$ and $\angle Z$ name the same angle? Explain.
- List all the angles that have W as the vertex.
- Name a straight angle.
- If $m\angle WYV = 4x - 2$, $m\angle VYZ = 2x - 5$, and $m\angle WYZ = 77$, find the measurements of $\angle WYV$ and $\angle VYZ$.
- Does $\angle YVW$ appear to be acute, obtuse, right, or straight?



- In the figure at the right, if \overline{QS} bisects $\angle RQP$, $m\angle RQS = 2x + 10$, and $m\angle SQP = 3x - 18$, find $m\angle SQR$.

