Chapter 1
Basics of Geometry

1.1 - Points, Lines and Planes

1.2 - Measuring and Constructing Segments

1.3 - Using Midpoint and Distance Formulas

1.4 - Perimeter and Area in the Coordinate Plane

1.5 - Measuring and Constructing Angles

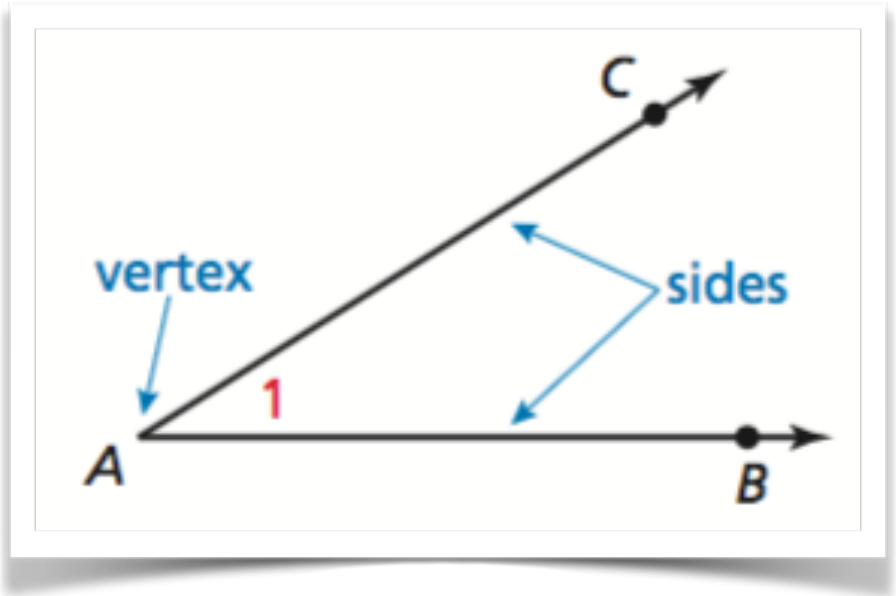
1.6 - Describing Pairs of Angles

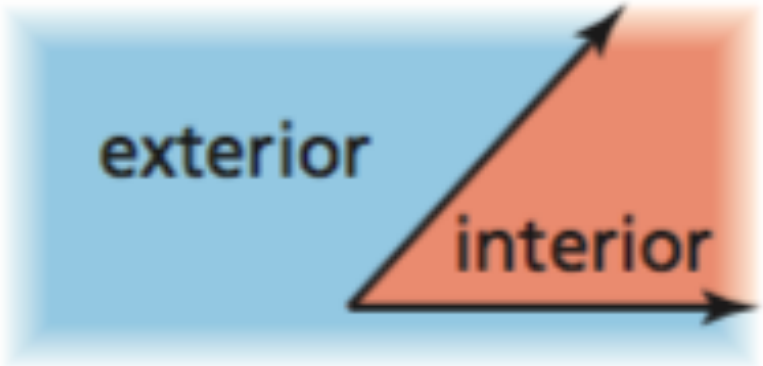
1.5 - Measuring and Constructing Angles

Vocabulary

angle - two different rays that have the same endpoint

angle interior - the smaller of the two angles formed by the angle

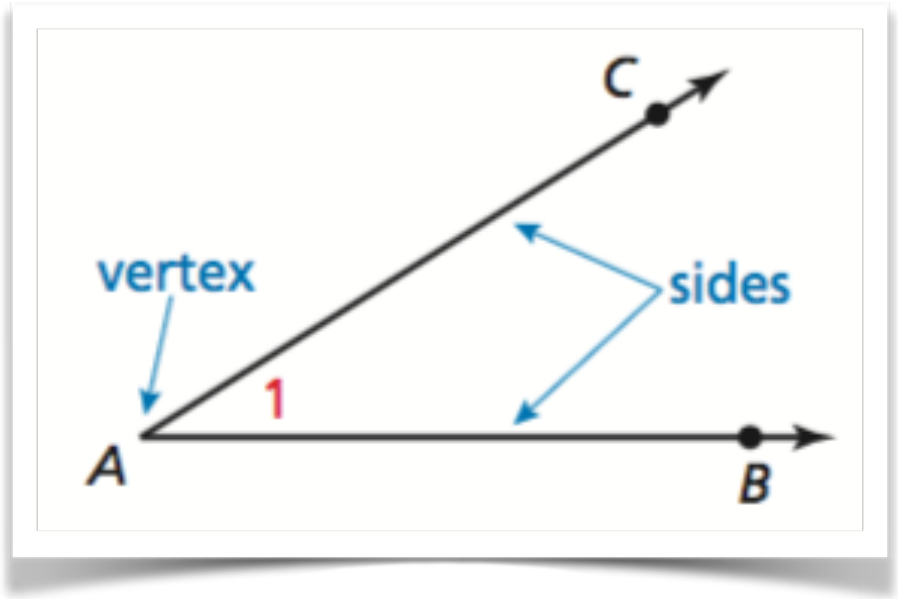




1.5 - Measuring and Constructing Angles

Naming an Angle

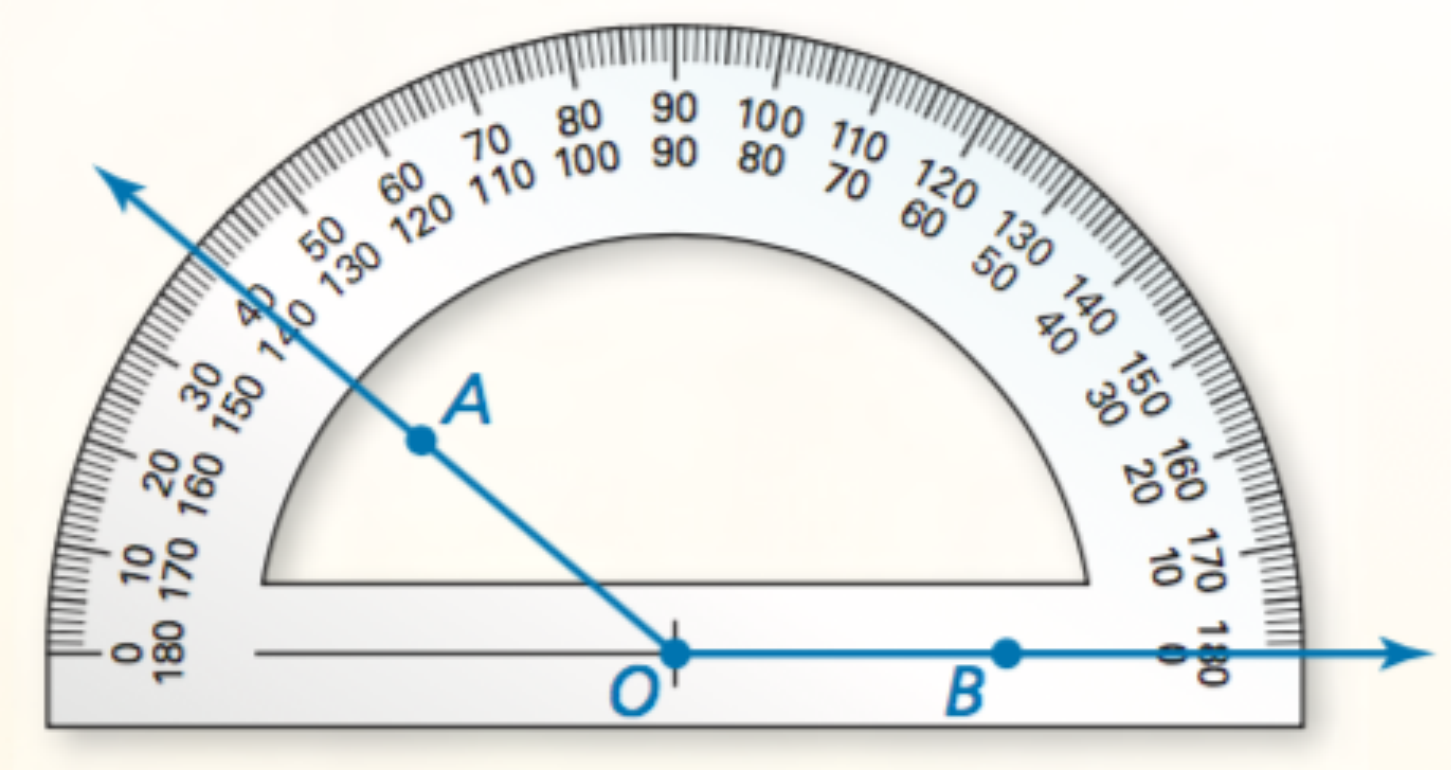
- Use the vertex: $\angle A$
- Use a point on each ray and the vertex: $\angle BAC$ or $\angle CAB$
- Use a number: $\angle 1$



1.5 - Measuring and Constructing Angles

Measure of an Angle

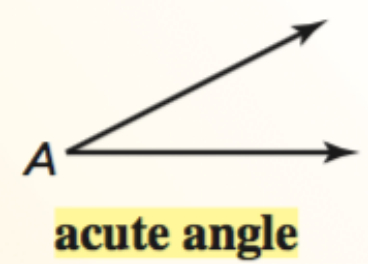
The measure of $\angle AOB$, also written $m\angle AOB$, is the difference of the angles of the rays $\overrightarrow{OA}$ and $\overrightarrow{OB}$ on a protractor.



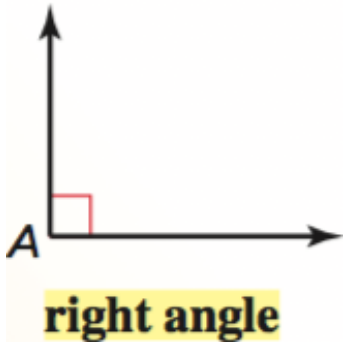
1.5 - Measuring and Constructing Angles

Types of Angles

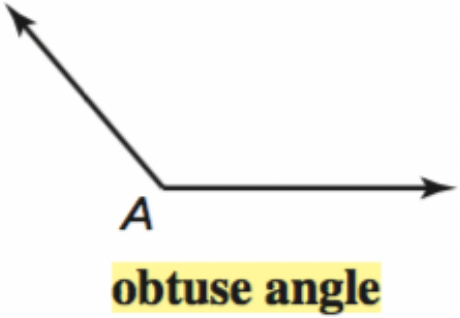
acute - a measure greater than 0˚ and less than 90˚



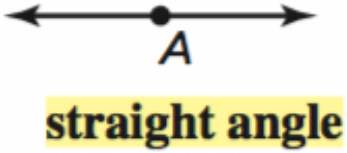
right - measures exactly 90˚



obtuse - measures greater than 90˚ and less than 180˚



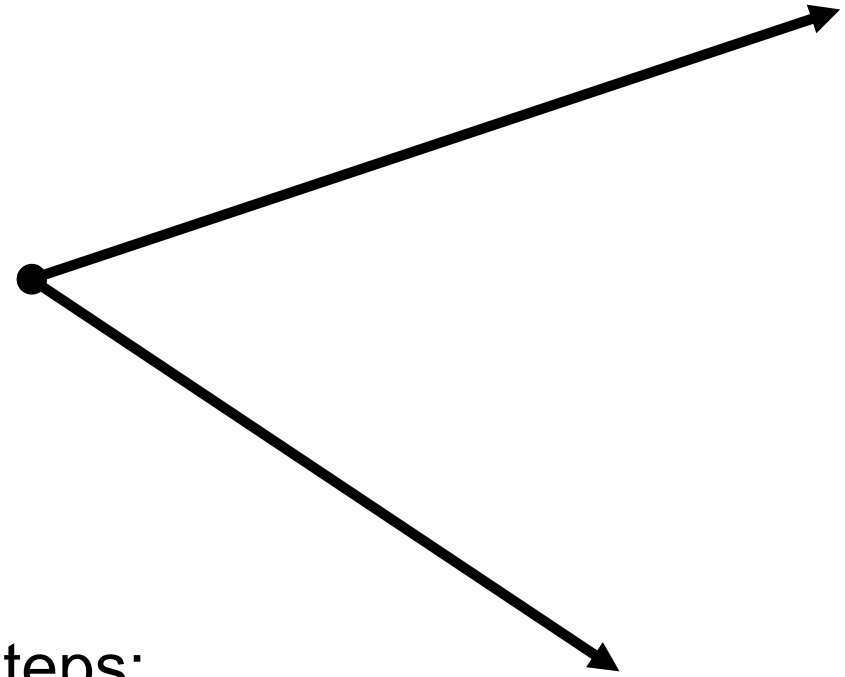
straight - measures exactly 180˚



1.5 - Measuring and Constructing Angles

Construction

Congruent Angle (copy an angle)

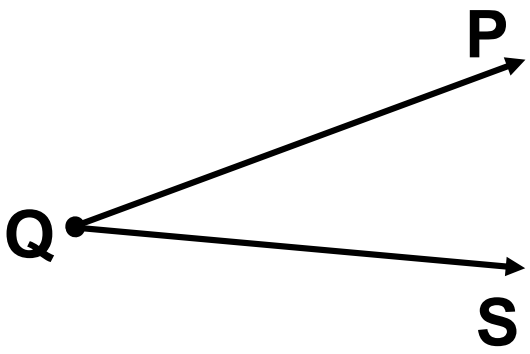


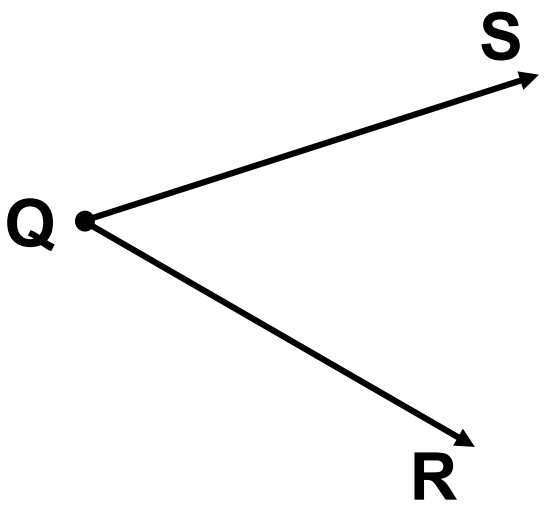
Steps:

1.5 - Measuring and Constructing Angles

Construction

Challenge: Given $\angle PQS$ and $\angle SQR$, can you construct $\angle RQP$ with ray $\overrightarrow{QS}$ in the interior?



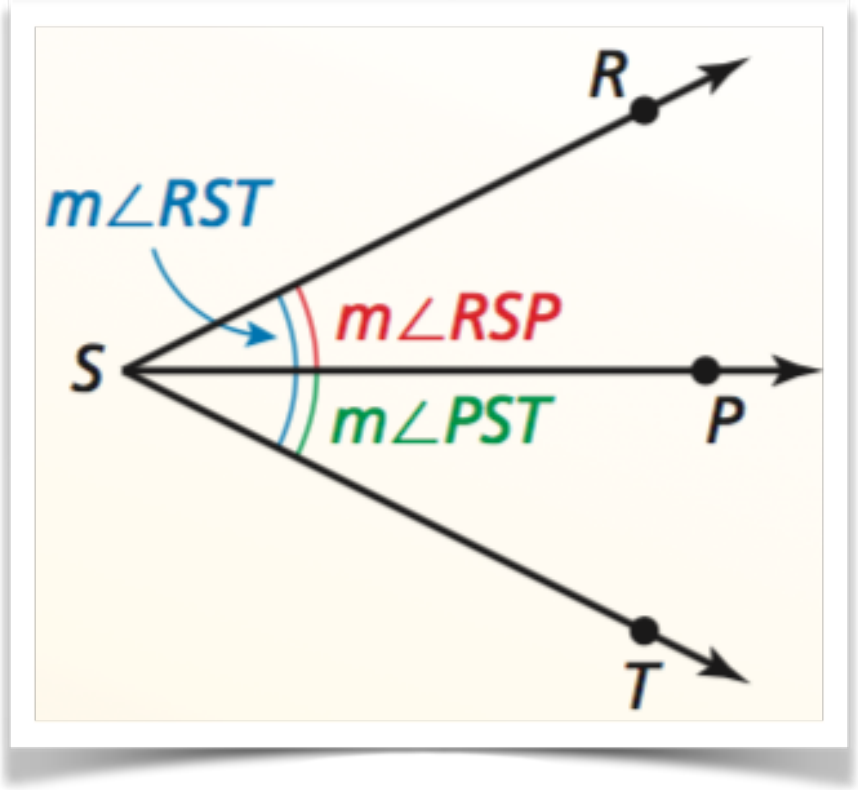


1.5 - Measuring and Constructing Angles

Postulate

Angle Addition Postulate	If point P is in the interior of $\angle RST$, then the measure of $\angle RST$ is equal to the sum of the measures of $\angle RSP$ and $\angle PST$.

$$m\angle RST = m\angle RSP + m\angle PST$$



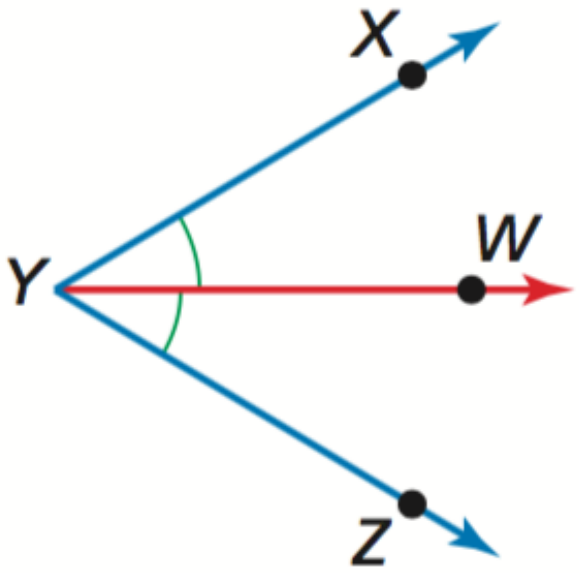
1.5 - Measuring and Constructing Angles

Vocabulary

angle bisector - a ray that divides an angle into two congruent angles

$\overrightarrow{YW}$ bisects $\angle XYZ$

so $\angle XYW \cong \angle ZYW$



1.5 - Measuring and Constructing Angles

Construction

Angle Bisector