

Measuring Angles

Unit 1 Lesson 4

Measuring Angles

Students will be able to:

measure, compare and classify angles.

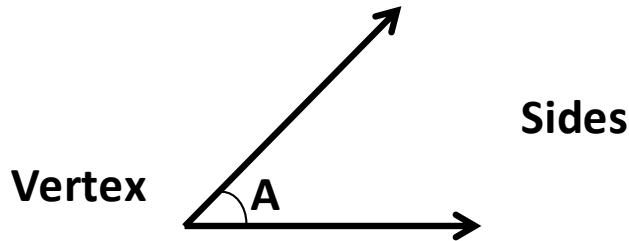
Key Vocabulary

- Angle and its measurement
- Sides and vertex of an angle
- Acute, Obtuse, Right and Straight angles
- Congruent angles

Measuring Angles

An **angle** is a measure of the turn between two lines that have a common end point. The rotation is measured in the anti-clockwise direction.

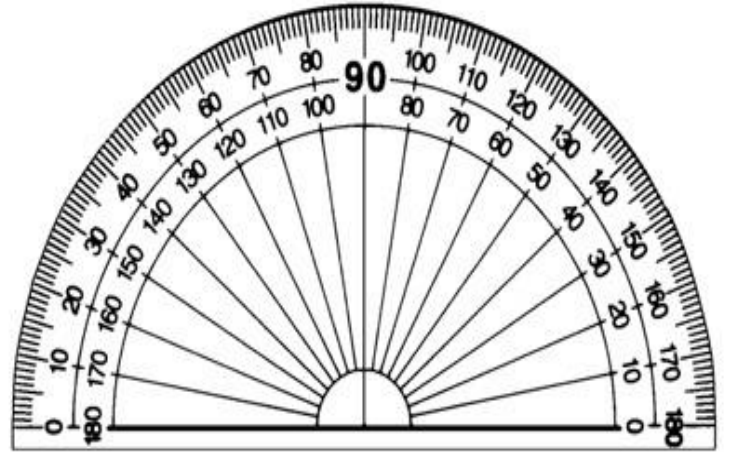
- The two lines form the sides of an angle.
- The point where two lines are meeting is called the **vertex**.
- The angle is represented by a \sphericalangle symbol along with a letter.



Measuring Angles

The measurement of the angle is done using a **protractor**. The unit of measuring angle is degrees ($^{\circ}$).

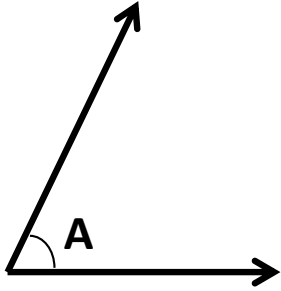
- If the angle has one of its sides horizontal, then align that side with 0 degrees on the protractor and read the angle for the other side of the angle.
- If no side is horizontal, then the angle is the difference of the measurements the two lines give on the protractor.



Measuring Angles

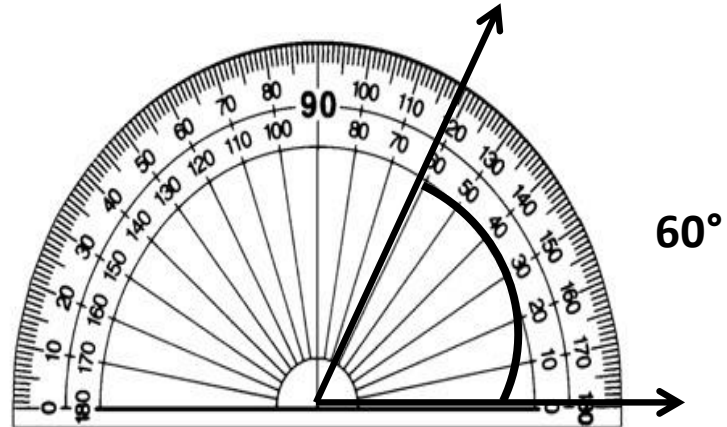
Problem: 1

Measure the angle A given below and write the answer in degrees.



Since one of the sides is horizontal, we align this side with 0 degrees and read the angle for the second side.

The angle A is 60°

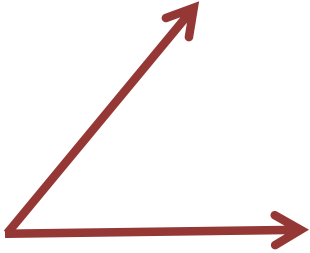


Measuring Angles

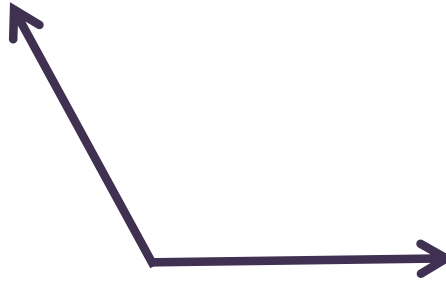
Based on the measure of an angle, it can be classified into four types:

1. **Acute angles** are the angles whose measures are less than 90 degrees.
2. **Right angle** is the angle whose measure is exactly 90 degrees.
3. **Obtuse angles** are the angles whose measures are greater than 90 degrees.
4. **Straight angle** is the angle whose measure is exactly 180 degrees.

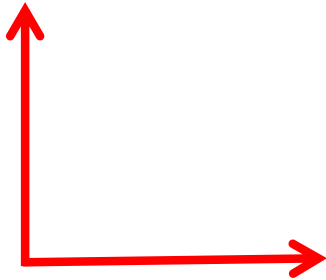
Measuring Angles



Acute angle



Obtuse angle



Right angle



Straight angle

Measuring Angles

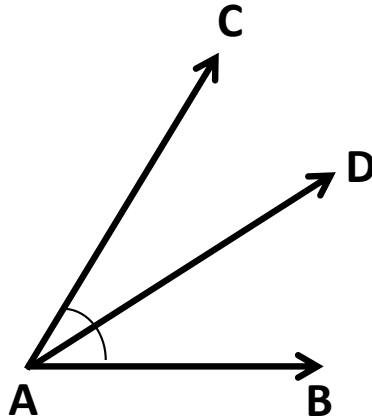
Two angles are said to be **congruent** if they have the same measures.



The angles **A** and **B** are congruent i.e. $\angle A \cong \angle B$

Measuring Angles

An **angle bisector** is a line that divides an angle into two equal parts.

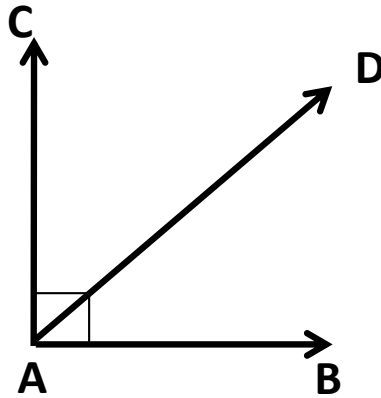


The line AD bisects the angle CAB or (angle A) in two equal parts and is called the angle bisector.

Measuring Angles

Problem: 2

Draw an angle bisector of the right angle.



The line AD bisects the right angle into two equal parts. Each bisected angle is 45° .