Lesson Notes 8-1

A central angle of a circle is an angle that is contained between two radii. For example, in the following diagram angle A is the central angle.



A radian is a measure of the central angle of a circle subtended by an arc (or part of a circle) that is the same length as the radius of the circle. Using radians allows you to express the measure of an angle as a real number without units. The central angle formed by one complete revolution in a circle is  $360^\circ$ , or  $2\pi$  in radian measure. This is useful when converting from radians and into radians.

**Example 1:** Sketch an angle with each given measure, and then estimate, to the nearest tenth, the equivalent measure in radians.



Example 2: Convert the following measurements into degrees. a) 1.4 (b) 2.8

$$1.4 \times \frac{360}{2\pi} = 80^{\circ}$$
  $2.8 \times \frac{360^{\circ}}{2\pi} = 160^{\circ}$ 

**Example 3:** Which measure is greater; 400° or 6.5 radians?