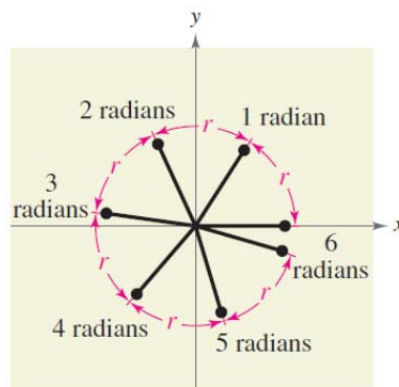
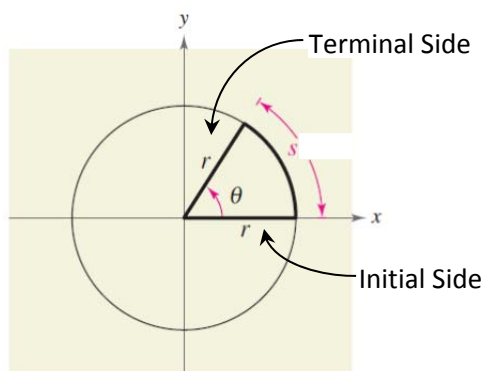


## Pg. 290 4.1 – Radian and Degree Measure

A radian is the measure of a central angle (theta) that is the ratio of the intercepted arc  $s$  to the radius  $r$ .

$$\theta = \frac{s}{r}$$



$$1 \text{ revolution} = 360^\circ = 2\pi \text{ radians or } 6.28 \text{ radians}$$

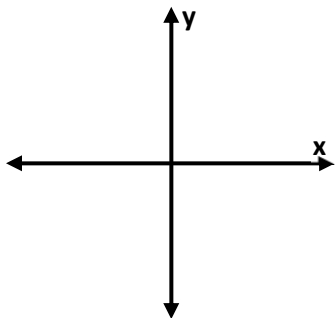
$$\frac{1}{2} \text{ revolution} = 180^\circ = \pi \text{ radians or } 3.14 \text{ radians}$$

$$\frac{1}{4} \text{ revolution} = 90^\circ = \frac{\pi}{2} \text{ radians or } 1.57 \text{ radians}$$

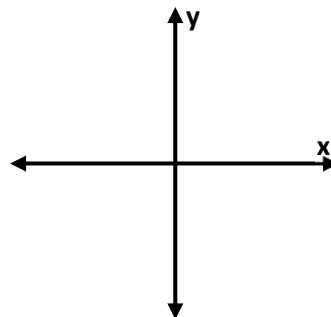
### Ex 1:

Determine the quadrant in which each angle lies. (The angle measure is given in radians.)

a)  $\frac{11}{8}\pi$



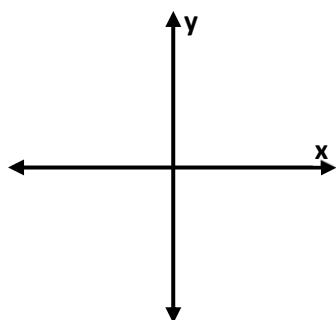
b)  $\frac{2}{3}\pi$



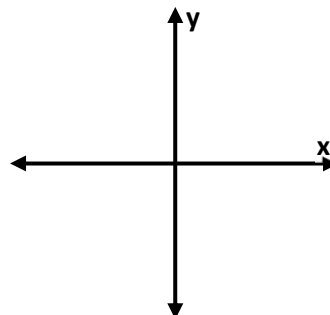
### Ex 2:

Sketch each angle in standard position.

a)  $-\frac{7}{4}\pi$

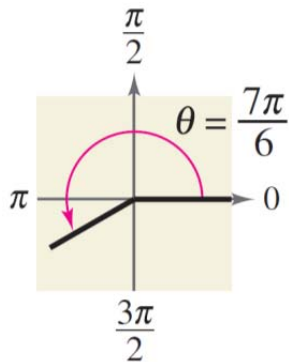


b)  $\frac{5}{2}\pi$



**Ex 3:**

Determine two coterminal angles (one positive and one negative) for each angle. Give your answer in radians.

**Ex 4:**

Find (if possible) the complement and supplement of the angle.

$$\frac{\pi}{12}$$

**Ex 5:**

Rewrite each angle in radian measure as a multiple of  $\pi$ .

$$315^\circ$$

**Ex 6:**

Rewrite each angle in degree measure.

$$-\frac{7}{12}\pi$$

**Arc Length**

$$s = r\theta \quad \theta = \frac{s}{r}$$

**Area of Sector**

$$A = \frac{1}{2}r^2\theta$$

**Ex 7:**

Find the area of the sector of the circle with radius  $r$  and central angle  $\theta$ .

**Radius:**  $r = 12$  millimeters      **Central Angle:**  $\theta = \frac{\pi}{4}$

**DMS (Degrees Minutes Seconds)****Ex 8:**

Convert each angle measure to decimal degree form.

**a)**  $245^\circ 10'$

**b)**  $-408^\circ 16' 20''$

**Ex 9:**

Convert each angle measure to  $D^\circ M' S''$  form.

**a)**  $-345.12^\circ$

**b)**  $0.7865^\circ$

**Assignment 4.1**

Pg. 290 Vocab #'s 1-10 ALL      Problem Set #'s 1-107 ODD

**REQUIRED:** Vocab, 1, 7, 11, 13, 17, 21, 25, 27, 33, 37, 39, 43, 47, 51,  
57, 63, 71, 77, 79, 83, 87, 91, 95-107 ODD