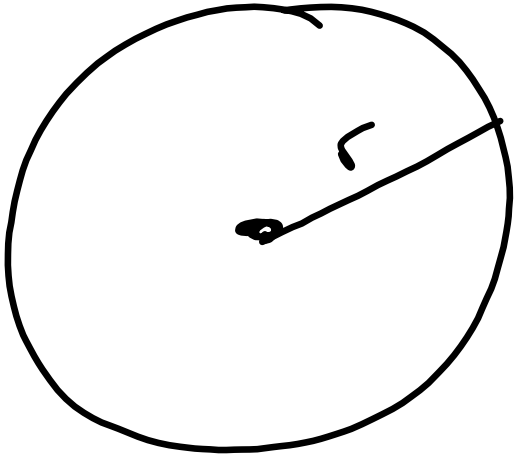
Feb. 12, 2014

Sect. 2-1a

Angle Measurement

Radian Measure

Deg Rad



$C = 2\pi r$

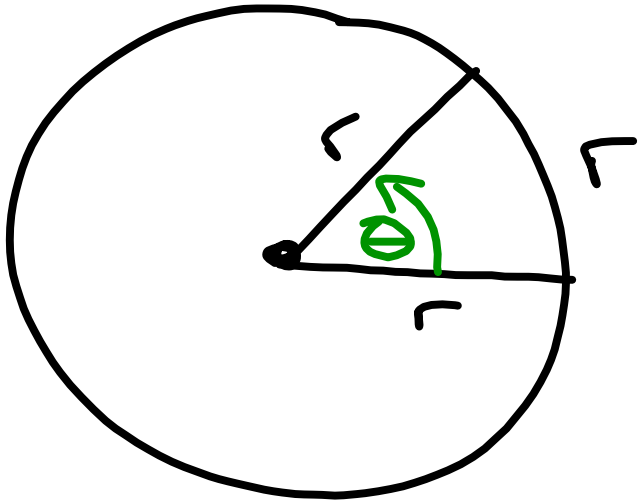
If $r = 1$

then $C = 2\pi$

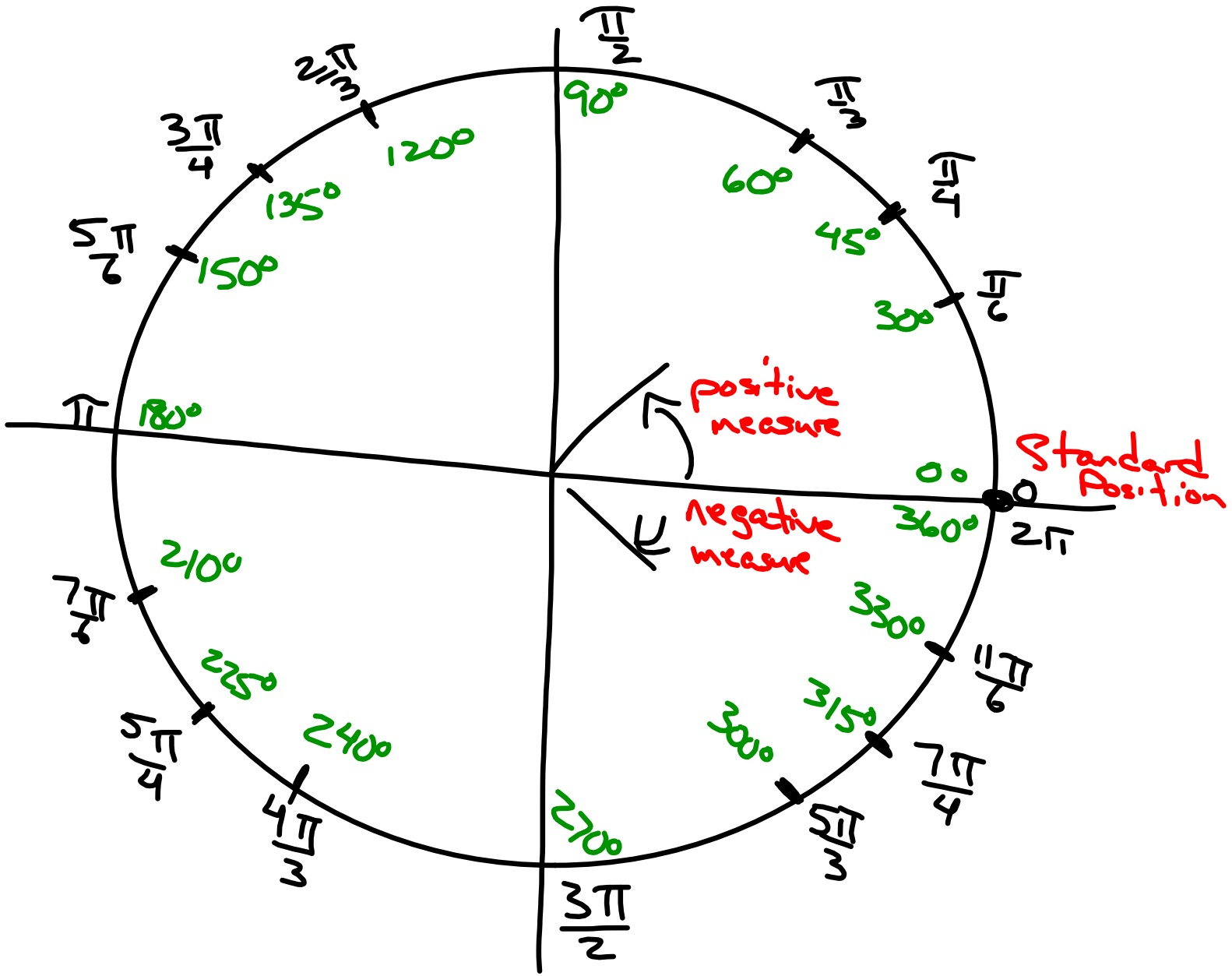
There are 2π radians in a full circle.

Radian measures are almost always given in terms of π

Defn:



$m\angle\theta = 1$ radian


π/2
90°
π/3
60°
π/4
45°
π/6
30°
0
0°
2π
360°
Standard Position
positive measure
negative measure
2π/3
120°
3π/4
135°
5π/6
150°
π
180°
7π/6
210°
5π/4
225°
4π/3
240°
3π/2
270°
5π/3
300°
7π/4
315°
11π/6
330°

Coterminal Angles

Same point on the circle with two different names – one pos., one neg.

$\frac{2\pi}{3} \Rightarrow \frac{2\pi}{3} - 2\pi = -\frac{4\pi}{3}$

$-\frac{\pi}{6} \Rightarrow -\frac{\pi}{6} + 2\pi = \frac{11\pi}{6}$

Convert

$\frac{0}{360^\circ}\ \frac{0}{2\pi}$

$360^\circ = 2\pi$ radians

$$\frac{360^\circ}{2\pi} = \frac{2\pi}{360^\circ} = 1$$

Convert $\frac{\pi}{6}$ to deg.

$$\frac{\pi \mid 360^\circ}{6 \mid 2\pi} = 30^\circ$$

Convert 60° to radians

$$\frac{60^\circ \mid 2\pi}{\mid 360^\circ} = \frac{2\pi}{6} = \frac{\pi}{3}$$