S'1.1 #s 1-10, 17, 20, 23, 26, 28, 29, 32, ..., 56, 57-60, 62, 65, 68, ..., 116

Mostly just every 3rd Problem.

Open Note Quizzes 'most every Friday.

$$\text{Linear Speed} = \frac{\text{arclength}}{\text{time}} = \frac{s}{t} = \frac{r\theta}{t}$$

So if you know how fast the tire's spinning you know fast the car is moving.

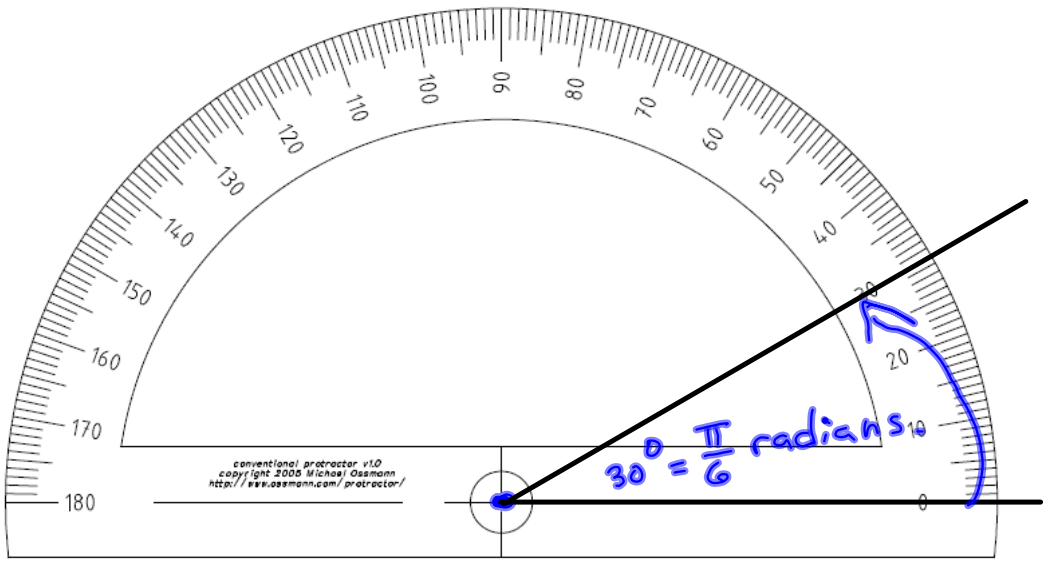
$$\text{Angular Speed} = \omega = \frac{\text{central angle}}{\text{time}} = \frac{\theta}{t}$$

1.3 Next

$\frac{\pi \text{ rads}}{180^\circ}$, $s = r\theta$, $A = \frac{1}{2}r^2\theta$,

2π = full circle = 360°

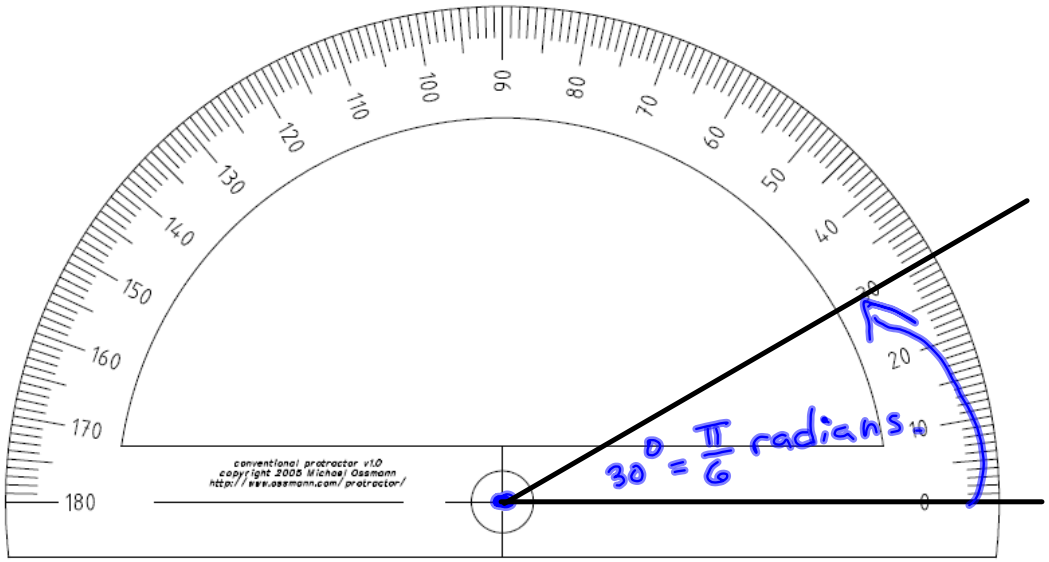
$\frac{\pi}{4}, \frac{\pi}{6}, \frac{\pi}{3}, 0, \frac{\pi}{2}$ Memorize 1st quadrant!



2π radians is a full circle.

radians relate angle measure to arc length.

$2\pi r$ = circumference of a circle



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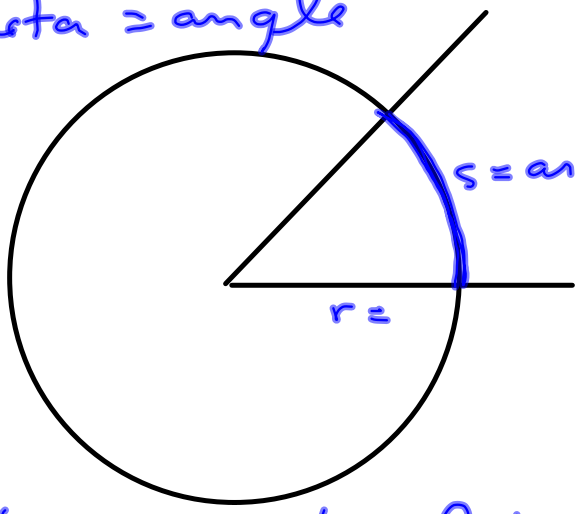
radians relate angle measure to arc length.

$2\pi r$ = circumference of a circle

θ = Theta = angle



$\frac{2\pi}{8} = \frac{\pi}{4}$

arc length is proportional to the angle.
r = radius is the constant of proportionality.

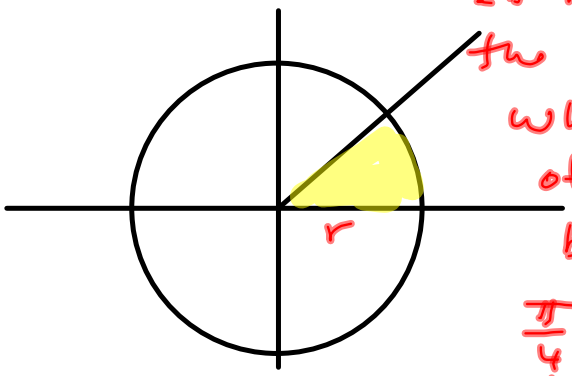
Angle = 2π
arc length = $2\pi r$

Angle = $45^\circ = \frac{\pi}{4}$ radians
Arc length = $\frac{\pi}{4} r$

In general:

$s = r\theta$, when θ is in radians.

Area of Circle is πr^2



2π radians is all the way around. what's the area of the arc subtended by an angle of $\frac{\pi}{4}$ radians?

$2\pi \cdot \frac{1}{2} \cdot r^2 = \pi r^2$

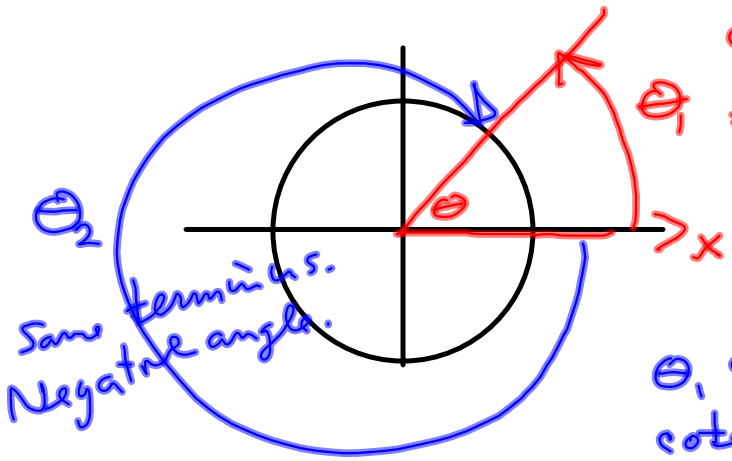
$\frac{\pi}{4} \cdot \frac{1}{2} \cdot r^2$

$\frac{1}{2} r^2 \theta$ is area!

Coterminal Angles.

Have same terminus.

Angles measured counterclockwise from the positive x-axis.



θ_1 & θ_2 are coterminal.

30° & -330° are coterminal

$30^\circ - 360^\circ$

$\frac{\pi}{6}$ &

$\frac{\pi}{6} - 2\pi = \frac{\pi}{6} - \frac{12\pi}{6} = -\frac{11\pi}{6}$

$\frac{\pi}{6} = 30^\circ$

$\frac{\pi}{4} = 45^\circ$

$\frac{\pi}{2} = 90^\circ$

$\frac{\pi}{3} = 60^\circ$

$\frac{2\pi \text{ radians}}{360 \text{ degrees}} = \frac{\pi \text{ radians}}{180 \text{ degrees}}$

Convert 135° to radians

Convert 25¢ to $

$\frac{100\,¢}{1\,\$}$

$(25¢)\left(\frac{1\,\$}{100¢}\right) = \frac{25}{100}\,\$ = \$.25$

$(135^\circ)\left(\frac{\pi \text{ rad}}{180^\circ}\right) = \frac{135}{180}\pi \text{ radians} = \frac{3}{4}\pi \text{ rads.}$