

1.1 ~ Angles in Degrees and Radians

You will learn to:

- Describe angles using proper vocabulary.
- Convert between degree and radian measure.

Angles in degrees and radians

Angle

initial side

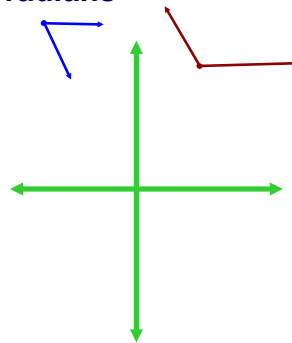
terminal side

standard position

positive angles

negative angles

coterminal angles

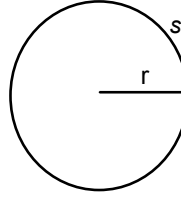


Radian measure of an angle

A radian is the angle, θ that intercepts an arc, s , equal in length to r , the radius of the circle.

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

$$s = r \theta$$



Common angles:

Right angle



Straight angle



Acute angle



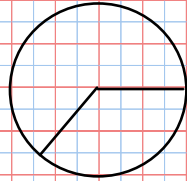
Angles $> \pi$?



Obtuse angle

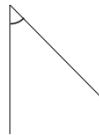


Coterminal angles: Have the same terminal side.



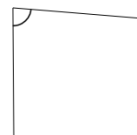
Complementary angles

$$\text{sum} = \frac{\pi}{2}$$



Supplementary angles

$$\text{sum} = \pi$$



CONVERTING FROM DEGREES TO
RADIANS
OR
FROM RADIANS TO DEGREES

$$360^\circ = 2\pi \text{ radians}$$

Convert to radians: 72° -148°

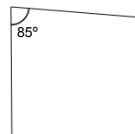
Convert to degrees: $\frac{3\pi}{12}$ $\frac{5\pi}{3}$

**Radians are a pure number, so if you see no unit of measure, radians are implied.

Return to complementary and supplementary angles

Complementary angles

sum = 90°



Supplementary angles

sum = 180°

