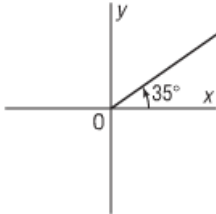


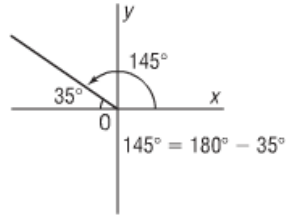
Lesson 2 Reference Angles

A *reference angle* is the positive acute angle formed between the terminal arm of the angle and the x -axis.

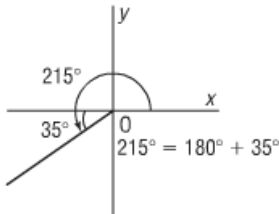
Quadrant I



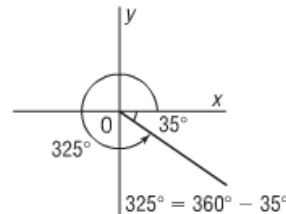
Quadrant II



Quadrant III



Quadrant IV



Examples

- Sketch the following angles in standard position and determine the reference angle.

a) 87°

b) 232°

c.) 101°

d.) 340°

2. Determine the values of θ such that $0^\circ \leq \theta \leq 360^\circ$ for the given trigonometric functions. Express answers to the nearest tenth of a degree.

a) $\sin \theta = 0.78615$

b) $\cos \theta = 0.43214$

c) $\tan \theta = -2.81763$

3. Determine the solution set for each of the following trigonometric equations over the interval $0^\circ \leq \theta \leq 360^\circ$.

a) $\cos\theta = -\frac{2}{3}$

b) $\tan\theta = -\frac{4}{3}$

c) $-3\sin\theta = 2$