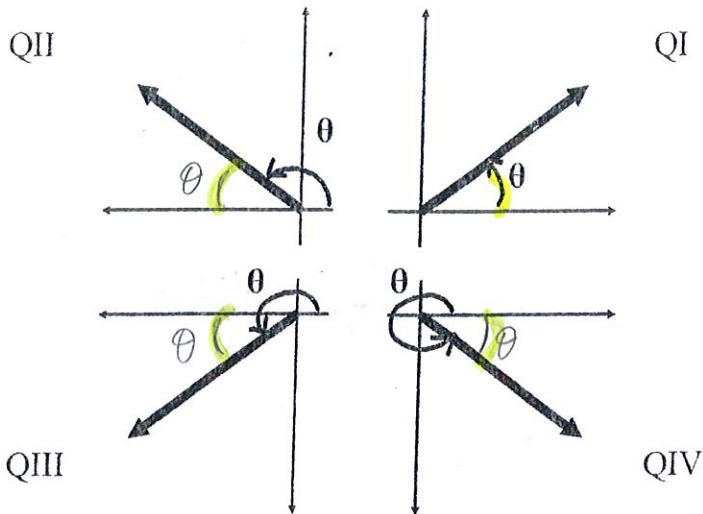


Reference Angles

A reference angle (θ') is ... the acute angle formed by the terminal side of the original angle (θ) and the horizontal x-axis.

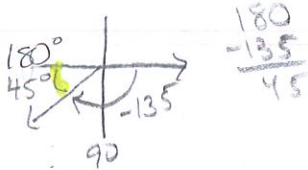
$0^\circ \rightarrow 90^\circ$
 $0 \rightarrow \frac{\pi}{2}$



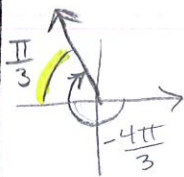
* positive, acute angle * shortest path back to the x-axis

Find the reference angle for each angle.

a) -135°



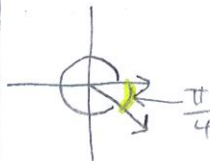
b) $-\frac{4\pi}{3} = -1\frac{1}{3}\pi$



$$\frac{4\pi}{3} - \pi$$

$$\frac{4\pi}{3} - \frac{3\pi}{3} = \boxed{\frac{\pi}{3}}$$

c) $\frac{7\pi}{4} = 1\frac{3}{4}\pi$



$$2\pi - \frac{7\pi}{4}$$

$$\frac{8\pi}{4} - \frac{7\pi}{4} = \boxed{\frac{\pi}{4}}$$