## The Weekly Rigor

No. 259

"A mathematician is a machine for turning coffee into theorems."

June 8, 2019

## 16 Problems Concerning the Unit Circle (Part 1 of 2)

(Part 2)

3.  $cos(\pi)$ 



4.  $sin(\pi)$ 



For any angle  $\theta$  in standard position and its corresponding point (x, y) on the unit circle,  $(\cos(\theta), \sin(\theta)) = (x, y)$ . Hence, for  $\theta = \pi$ ,  $\cos(\pi) = -1$ .

For any angle  $\theta$  in standard position and its corresponding point (x, y) on the unit circle,  $(\cos(\theta), \sin(\theta)) = (x, y)$ . Hence, for  $\theta = \pi$ ,  $\sin(\pi) = 0$ .

5.  $\cos\left(\frac{\pi}{2}\right)$ 



For any angle  $\theta$  in standard position and its corresponding point (x, y) on the unit circle,  $(\cos(\theta), \sin(\theta)) = (x, y)$ . Hence, for  $\theta = \frac{\pi}{2}, \cos\left(\frac{\pi}{2}\right) = 0$ . 6.  $\sin\left(\frac{\pi}{2}\right)$ 



7.  $\cos\left(\frac{3\pi}{2}\right)$ 



8.  $\sin\left(\frac{3\pi}{2}\right)$ 



For any angle  $\theta$  in standard position and its corresponding point (x, y) on the unit circle,  $(\cos(\theta), \sin(\theta)) = (x, y)$ . Hence, for  $\theta = \frac{\pi}{2}$ ,  $\sin\left(\frac{\pi}{2}\right) = 1$ .

For any angle  $\theta$  in standard position and its corresponding point (x, y) on the unit circle,  $(\cos(\theta), \sin(\theta)) = (x, y)$ . Hence, for  $\theta = \frac{3\pi}{2}$ ,  $\cos\left(\frac{3\pi}{2}\right) = 0$ .

For any angle  $\theta$  in standard position and its corresponding point (x, y) on the unit circle,  $(\cos(\theta), \sin(\theta)) = (x, y)$ . Hence, for  $\theta = \frac{3\pi}{2}$ ,  $\sin\left(\frac{3\pi}{2}\right) = -1$ .

"Only he who never plays, never loses."

Written and published every Saturday by Richard ShedenhelmWeeklyRigor@gmail.com