

# Classroom Voting Questions: Precalculus

## Solving Trigonometric Equations

1. For  $\theta$  in the interval  $[0, 2\pi)$ , find all solutions of the equation  $\sin \theta = \frac{1}{2}$ .

(a)  $\theta = \frac{\pi}{6}$

(b)  $\theta = \frac{\pi}{6}$  and  $\theta = \frac{5\pi}{6}$

(c)  $\theta = \frac{\pi}{6}$ ,  $\theta = \frac{5\pi}{6}$ ,  $\theta = \frac{7\pi}{6}$ , and  $\theta = \frac{11\pi}{6}$

(d) None of the above

2. Solve the equation  $\tan \theta = 1$ .

(a)  $\theta = \frac{\pi}{4}$

(b)  $\theta = \frac{\pi}{4}$  and  $\theta = \frac{5\pi}{4}$

(c)  $\theta = \frac{\pi}{4} + 2\pi n$ , where  $n$  is any integer

(d)  $\theta = \frac{5\pi}{4} + \pi n$ , where  $n$  is any integer

3. Solve the equation  $\sin \theta \tan \theta = \tan \theta$ .

(a)  $\theta = \frac{\pi}{2} + 2\pi n$ , where  $n$  is any integer

(b)  $\theta = \frac{\pi}{2} + 2\pi n$  and  $2\pi n$ , where  $n$  is any integer

(c)  $\theta = \frac{\pi}{2} + 2\pi n$  and  $\pi n$ , where  $n$  is any integer

(d)  $\pi n$ , where  $n$  is any integer