

Question 1

What is the exact value of $\cos \frac{x}{2}$, given the information that $\tan x = \frac{8}{15}$, $180^\circ \leq x \leq 270^\circ$

- A) $\frac{1}{\sqrt{17}}$
 - B) $-\frac{1}{\sqrt{17}}$
 - C) $\frac{4}{\sqrt{17}}$
 - D) $-\frac{4}{\sqrt{17}}$
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Question 2

Which of the following is the solution set of the equation $\sin 2x = \cos x$ on the interval $[0, 2\pi)$

- A. $\{\frac{\pi}{6}, \frac{5\pi}{6}\}$
 - B. $\{\frac{\pi}{6}, \frac{5\pi}{6}, \frac{8\pi}{6}, \frac{3\pi}{2}\}$
 - C. $\{\frac{\pi}{6}, \frac{5\pi}{6}, \frac{7\pi}{6}, \frac{11\pi}{6}\}$
 - D. $\{\frac{\pi}{6}, \frac{\pi}{2}, \frac{5\pi}{6}, \frac{3\pi}{2}\}$
 - E. $\{\frac{\pi}{6}, \frac{\pi}{2}, \frac{7\pi}{6}, \frac{3\pi}{2}\}$
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Question 3

A ball on a spring is pulled 6 inches below its rest position and then released. After t seconds, the ball's distance, d , in inches from its rest position is given by $d = -6 \cos \frac{\pi t}{2}$. For which of the following values of t , the ball is 3 inches below its rest position.

- $3/2$
- $5/3$
- $1/3$
- $10/3$