At what point the graph of f(x) = 2cos x – 1 intersects the x-axis?

A. x=π/6
B. x=π/4
C. x=π/3
D. x=π/8

Solution:

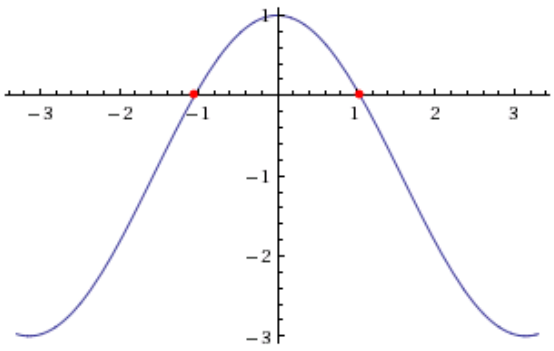
Graph of the X-axis - Y-coordinate equals to zero:

$$f(x) = 2\cos x - 1$$

$$g(x) = 0$$

$$f(x) = g(x)$$

$$2\cos x - 1 = 0$$



$$\cos x = \frac{1}{2}$$

$$x = \pm\frac{\pi}{3} + 2\pi n, n \in Z$$

We are looking for solution in the range from 0 to π:

$$n = 0 \rightarrow x = \frac{\pi}{3} + 2\pi n = \frac{\pi}{3}$$

Answer: $C. x = \frac{\pi}{3}$