

Answer on Question#41693 – Math - Trigonometry

Question:

Solve, finding all solutions in $[0, 2\pi)$
 $-\cos(\pi-x)-\sin(x-\pi/2)=-1$

Solution:

$$\begin{array}{l} 1) \quad -\cos(\pi - x) - \sin\left(x - \frac{\pi}{2}\right) = -1 \\ 2) \quad \cos(x) + \sin\left(\frac{\pi}{2} - x\right) = -1 \\ 3) \quad \cos(x) + \cos(x) = -1 \\ 4) \quad \cos(x) = -\frac{1}{2} \\ 5) \quad x = \frac{2\pi}{3} \text{ or } x = \frac{4\pi}{3} \end{array}$$

$$\text{Answer: } x = \frac{2\pi}{3} \text{ or } x = \frac{4\pi}{3}$$