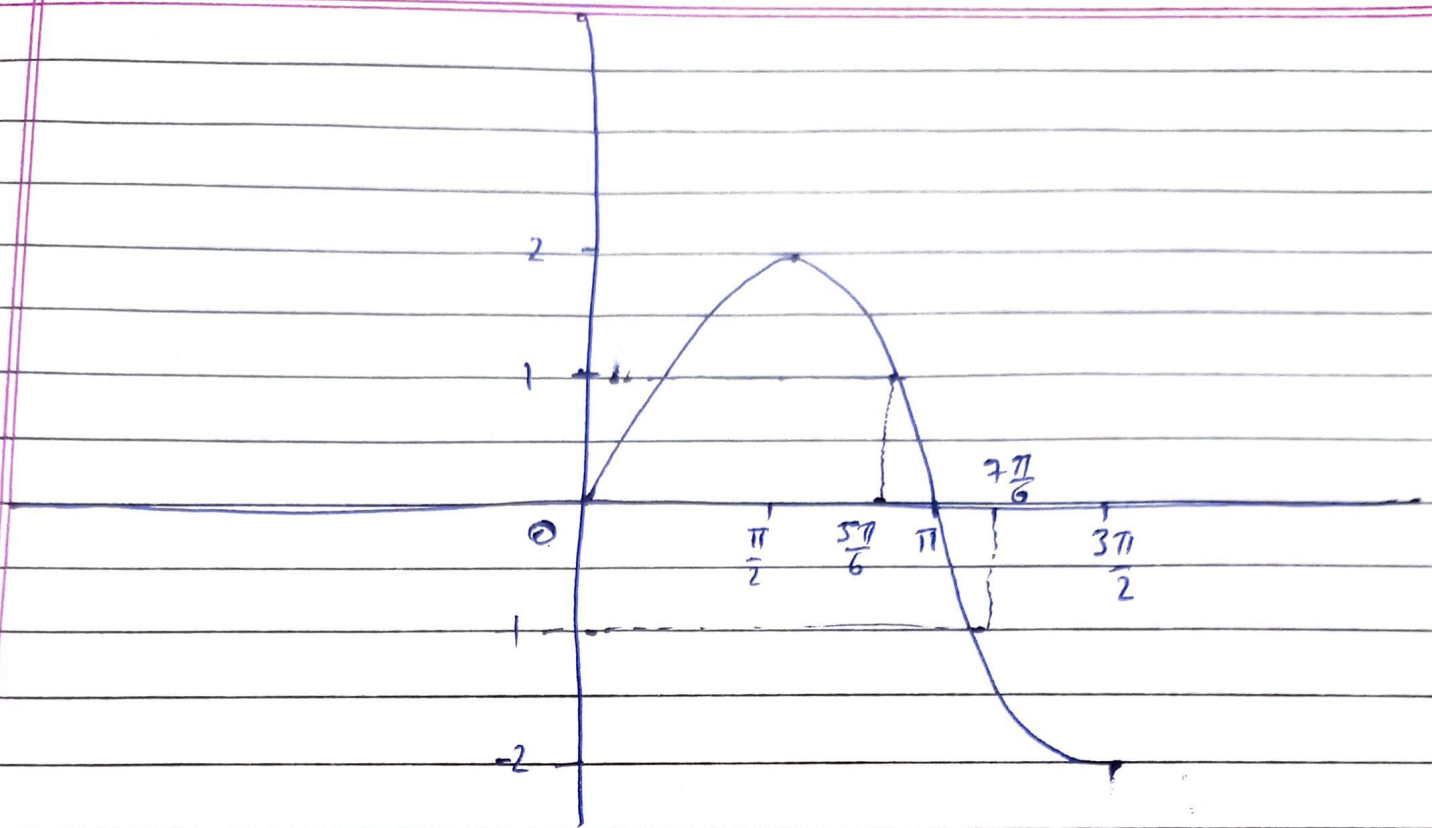




$$\Rightarrow 2 \sin x = 1$$

$$\boxed{x = \frac{\pi}{6}}$$

$$\Rightarrow 2 \sin x = -1$$

$$\sin x = -\frac{1}{2} = \sin(\pi + \frac{\pi}{6})$$

$$\boxed{x = \frac{7\pi}{6}}$$

$$\int_{\frac{\pi}{2}}^{\frac{3\pi}{2}} [2 \sin x] dx = \int_{\frac{\pi}{2}}^{\frac{5\pi}{6}} 1 dx + \int_{\frac{5\pi}{6}}^{\pi} 0 dx + \int_{\pi}^{\frac{7\pi}{6}} -1 dx + \int_{\frac{7\pi}{6}}^{\frac{3\pi}{2}} -2 dx$$

$$\Rightarrow \left[\frac{5\pi}{6} - \frac{\pi}{2} \right] + 0 - \left[\frac{7\pi}{6} - \pi \right] - 2 \left[\frac{3\pi}{2} - \frac{7\pi}{6} \right]$$

$$\Rightarrow \frac{\pi}{3} - \left[\frac{\pi}{6} \right] - 2 \left[\frac{\pi}{3} \right]$$

$$\Rightarrow \frac{\pi}{3} - \frac{\pi}{6} - \frac{2\pi}{3} \Rightarrow \frac{2\pi - \pi - 4\pi}{6} \Rightarrow -\frac{3\pi}{6} = \left[-\frac{\pi}{2} \right]$$

Option (c)