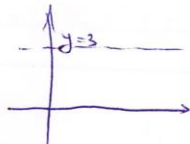


2.84
→ 4

$$y = \sqrt{3} \cos x + 3 \sin x$$



$$3 = \sqrt{3} \cos x + 3 \sin x \quad | :3$$

$$1 = \frac{\sqrt{3}}{3} \cos x + \sin x$$

$$1 = \tan \frac{\pi}{6} \cos x + \sin x \quad | \cdot \frac{\pi}{6}$$

$$\cos \frac{\pi}{6} = \cos \frac{\pi}{6} \cos x + \cos \frac{\pi}{6} \sin x$$

$$\sin \frac{\pi}{3} = \sin \left(\frac{\pi}{6} + x \right) \rightarrow \begin{array}{l} \frac{\pi}{3} = \frac{\pi}{6} + x + 2\pi k \\ x = \frac{\pi}{6} + 2\pi k \end{array} \quad \left| \begin{array}{l} \frac{\pi}{3} = \frac{\pi}{6} - x + 2\pi k \\ x = \frac{\pi}{2} + 2\pi k \end{array} \right.$$

$$\int_{\frac{\pi}{6}}^{\frac{\pi}{2}} (3 - \sqrt{3} \cos x - 3 \sin x) dx = \left[3x - \sqrt{3} \sin x + 3 \cos x \right]_{\frac{\pi}{6}}^{\frac{\pi}{2}} = \left| 3 \left(\frac{\pi}{2} - \frac{\pi}{6} \right) - \sqrt{3} + \frac{\sqrt{3}}{2} + 0 - \frac{3\sqrt{3}}{2} \right|$$
$$= \left| \pi - 2\sqrt{3} \right| = 2\sqrt{3} - \pi$$