

13. Himpunan semua bilangan real x pada selang $[0, 2\pi]$ yang memenuhi $2 - 2\sin^2 x \leq \sqrt{3} \cos x$ berbentuk $[a, b] \cup [c, d]$. Nilai $a + b + c + d$ adalah
- (A) 3π
 (B) $3\frac{1}{2}\pi$
 (C) 4π
 (D) $4\frac{1}{2}\pi$
 (E) 5π

Solusi: [C]

$$2 - 2\sin^2 x \leq \sqrt{3} \cos x$$

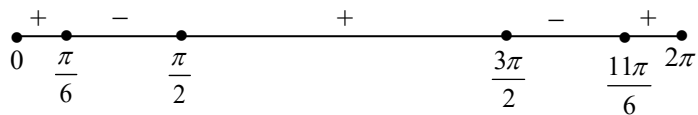
$$2 - 2(1 - \cos^2 x) \leq \sqrt{3} \cos x$$

$$2 - 2 + 2\cos^2 x \leq \sqrt{3} \cos x$$

$$2\cos^2 x - \sqrt{3} \cos x \leq 0$$

$$\cos x (2\cos x - \sqrt{3}) \leq 0$$

$$\left[\frac{\pi}{6}, \frac{\pi}{2}\right] \cup \left[\frac{3\pi}{2}, \frac{11\pi}{6}\right] = [a, b] \cup [c, d]$$



$$a + b + c + d = \frac{\pi}{6} + \frac{\pi}{2} + \frac{3\pi}{2} + \frac{11\pi}{6} = \frac{\pi + 3\pi + 9\pi + 11\pi}{6} = \frac{24}{6}\pi = 4\pi$$