

2.32

1

$$2 + (\sqrt{3} - \sqrt{2}) \sin x \geq 2 \cos^2 x + \sqrt{3} \sin x \geq 2$$

$$2 - \sqrt{2} \sin x \geq 2 \cos^2 x$$

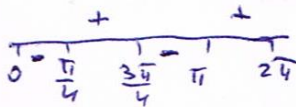
$$2 - \sqrt{2} \sin x \geq 2 - 2 \sin^2 x$$

$$\sqrt{2} \sin x (\sqrt{2} \sin x - 1) \geq 0$$

$$x = \pi k$$

$$x = \frac{\pi}{4} + 2\pi k$$

$$x = \frac{3\pi}{4} + 2\pi k$$



$$\boxed{\frac{\pi}{4} \leq x < \frac{3\pi}{4}, \quad \pi \leq x \leq 2\pi}$$

$$2 \cos^2 x + \sqrt{3} \sin x - 2 \geq 0$$

$$2 - 2 \sin^2 x + \sqrt{3} \sin x - 2 \geq 0$$

$$0 \geq \sin x (2 \sin x - \sqrt{3})$$

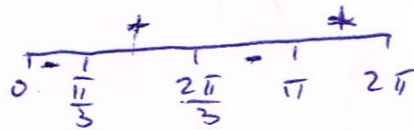
$$\downarrow$$

$$x = \pi k$$

$$\downarrow$$

$$x = \frac{\pi}{3} + 2\pi k$$

$$x = \frac{2\pi}{3} + 2\pi k$$



$$\boxed{0 \leq x \leq \frac{\pi}{3}, \quad \frac{2\pi}{3} \leq x \leq \pi}$$

$$\boxed{\frac{\pi}{4} \leq x \leq \frac{\pi}{3}$$

$$x = \pi$$

$$\frac{2\pi}{3} \leq x \leq \frac{3\pi}{4}}$$

with overlap like:

