

$$2\sqrt{3}\sin^2(x/2) + 2 = 2\sin^2(x) + \sqrt{3}$$

$$2\sqrt{3}(1-\cos x)/2 + 2 = 2\sin^2(x) + \sqrt{3}$$

$$\sqrt{3}(1-\cos x) + 2 = 2\sin^2(x) + \sqrt{3}$$

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

$$\cos x = t$$

$$\sqrt{3}(1-t) + 2 = 2(1-t^2) + \sqrt{3}$$

$$\sqrt{3}t - 2t^2 = 0$$

$$t(\sqrt{3}-2t) =$$

$$t=0 \quad t=\sqrt{3}/2$$

$$\cos x = 0$$

$$x = \pi/2 + \pi k, k \in \mathbb{Z}$$

$$\cos x = \sqrt{3}/2$$

$$x = \pm \pi/6 + 2\pi k, k \in \mathbb{Z}$$

