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

$$\sqrt{3}(\sin^2(x) - \cos^2(x)) - \sin(2x) = 0$$
$$-\sqrt{3}\cos(2x) - \sin(2x) = 0$$
$$\sqrt{3}\cos(2x) = -\sin(2x)$$
$$\frac{\sin(2x)}{\sqrt{3}\cos(2x)} = 1$$
$$\tan(2x) = -\sqrt{3}$$
$$2x = -\frac{\pi}{3} + k\pi$$
$$x = -\frac{\pi}{6} + \frac{\pi}{2}$$