$(\sin^2 x/3)^2 + (\cos^2 x/3)^2 > \frac{1}{2}$

$(\sin^2 x/3)^2 + 2\sin^2 x/3 \cdot \cos^2 x/3 + (\cos^2 x/3)^2 - 2\sin^2 x/3 \cdot \cos^2 x/3 > \frac{1}{2}$

$(\sin^2 x/3 + \cos^2 x/3)^2 - 2\sin^2 x/3 \cdot \cos^2 x/3 > \frac{1}{2}$

$1 - 2\sin^2 x/3 \cdot \cos^2 x/3 > \frac{1}{2}$

$1 - 2(2\sin x/3 \cdot \cos x/3/2)^2 > \frac{1}{2}$

$1 - 2\sin^2(2x/3)/4 > \frac{1}{2}$

$1 - \sin^2(2x/3)/2 > \frac{1}{2}$

$1 - (1 - \cos 4x/3)/4 > \frac{1}{2}$

$4 - (1 - \cos 4x/3) > 2$

$3 + \cos 4x/3 > 2$

$\cos(4x/3) > -1$

$1 - \frac{1}{4} + \cos(4x/3)/4 > \frac{1}{2}$

$3 + \cos(4x/3) > 2$

$\cos(4x/3) > -1$

$-p + 2pk < 4x/3 < p + 2pk$

$-3p/4 + 3pk/2 < x < 3p/4 + 3pk/2$