

$$4\cos^2 x - 4\cos^2 3x \cdot \cos x + \cos^2 3x = 0$$

$$\cos x = t$$

$$4t^2 - 4\cos^2 3x \cdot t + \cos^2 3x = 0$$

$$\cos^2 3x = k$$

$$4t^2 - 4kt + k = 0$$

$$D \geq 0$$

$$D = 4\cos^4 3x - 4\cos^2 3x = 4\cos^2 3x(\cos^2 3x - 1) = -4\cos^2 3x \sin^2 3x \geq 0 \quad | \cdot (-1)$$

$$4\cos^2 3x \sin^2 3x \leq 0 \quad \Rightarrow D = 0$$

$$4\cos^2 3x \sin^2 3x = 0$$

$$4\cos^2 3x = 0 \quad \sin^2 3x = 0$$

$$\cos 3x = 0 \quad \sin 3x = 0$$

$$3x = P/2 + Pk \quad 3x = Pk$$

$$x = P/6 + Pk/3 \quad x = Pk/3$$

$$t = 2\cos^2 3x/4 = \cos^2 3x/2$$

$$\cos x = \cos^2 3x/2 \quad | \cdot 2$$

$$2\cos x - \cos^2 3x = 0$$

$$2\cos x - (1 + \cos 6x)/2 = 0$$

$$4\cos x - 1 - \cos 6x = 0$$

$$4\cos(0) - 1 - \cos 6(0) = 4 - 1 - 1 = 2 \text{ (не равно 0)}$$

$$4\cos(P/6) - 1 - \cos 6(P/6) = 2\sqrt{3} - 1 - (-1) = 2\sqrt{3} \text{ (не равно 0)}$$

$$4\cos(P/3) - 1 - \cos 6(P/3) = 2 - 1 - 1 = 0$$

$$4\cos(P/2) - 1 - \cos 6(P/2) = 0 - 1 - (-1) = 0$$

$$4\cos(2P/3) - 1 - \cos 6(2P/3) = -2 - 1 - 1 = -4 \text{ (не равно 0)}$$

$$4\cos(5P/6) - 1 - \cos 6(5P/6) = -2\sqrt{3} - 1 + 1 = -2\sqrt{3} \text{ (не равно 0)}$$

$$4\cos(P) - 1 - \cos 6(P) = -4 - 1 + 1 = -4 \text{ (не равно 0)}$$

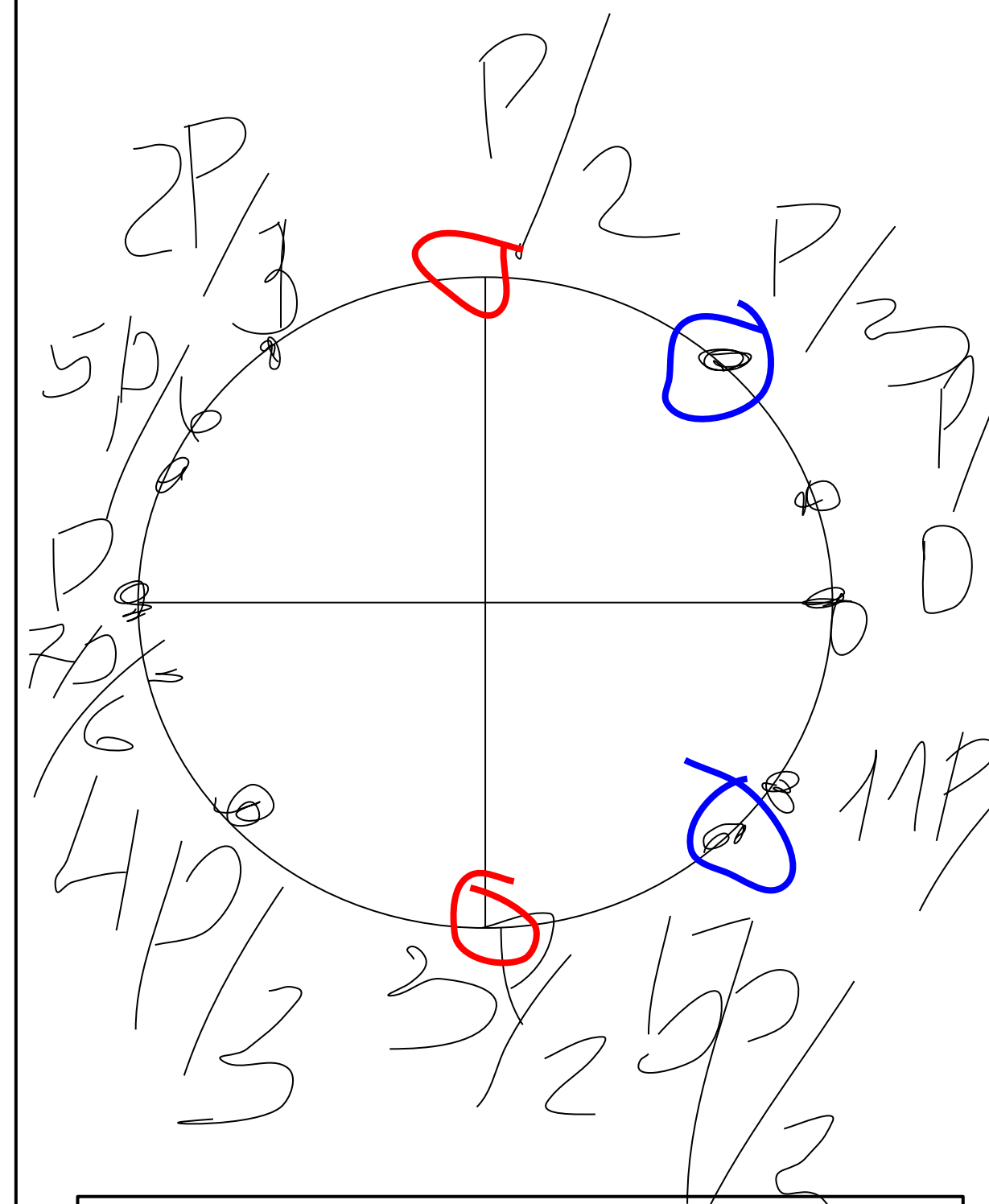
$$4\cos(7P/6) - 1 - \cos 6(7P/6) = -2\sqrt{3} - \dots \text{ (не равно 0)}$$

$$4\cos(4P/3) - 1 - \cos 6(4P/3) = -2 - 1 - \dots \text{ (не равно 0)}$$

$$4\cos(3P/2) - 1 - \cos 6(3P/2) = 0 - 1 + 1 = 0$$

$$4\cos(5P/3) - 1 - \cos 6(5P/3) = 2 - 1 - 1 = 0$$

$$4\cos(11P/6) - 1 - \cos 6(11P/6) = 2\sqrt{3} - 1 - (-1) = 2\sqrt{3} \text{ (не равно 0)}$$



Ответ: $P/2 + Pk; \pm P/3 + 2Pk$