

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

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$$\cos x = t$$

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

$$D/4 = 4\cos^4 3x - 4\cos^2 3x = 4\cos^2 3x(\cos^2 3x - 1) = -4\cos^2 3x \sin^2 3x$$

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

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

$$\cos 3x = 0$$

$$3x = \pi/2 + \pi k$$

$$x = \pi/6 + \pi k/3$$

$$\sin 3x = 0$$

$$3x = \pi n$$

$$x = \pi n/3$$

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

$$\sin 6x = 0$$

$$6x = \pi t$$

$$x = \pi t/6$$

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

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

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

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

$$x_1 = 2\pi t \quad \cos^2(6\pi t) - 2\cos(2\pi t) = -1$$

$$x_2 = \pi/6 \quad \cos^2(\pi/2) - 2\cos(\pi/6) = -\sqrt{3}$$

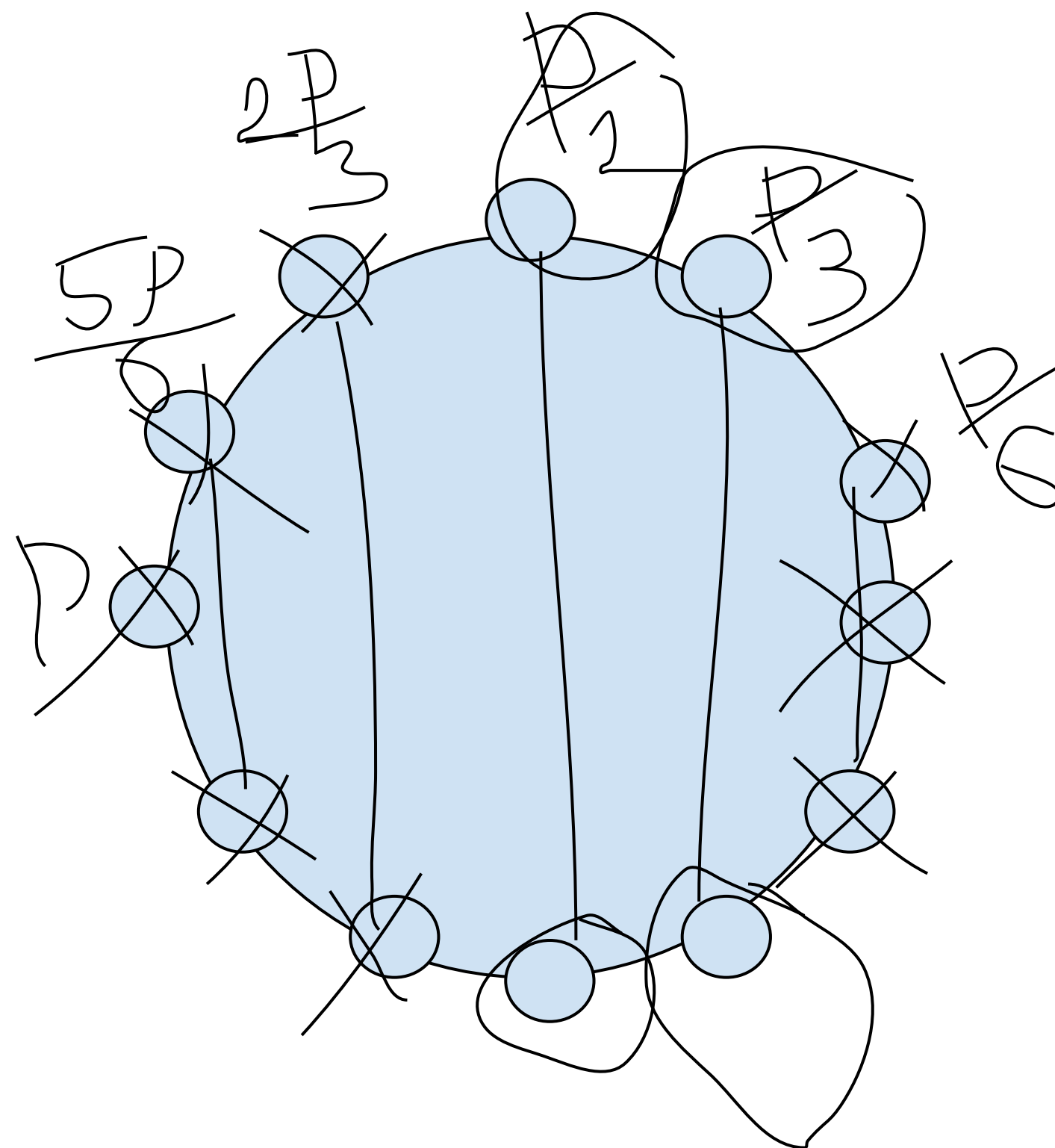
$$x_3 = \pi/3 \quad \cos^2(\pi) - 2\cos(\pi/3) = 0$$

$$x_4 = \pi/2 \quad \cos^2(3\pi/2) - 2\cos(\pi/2) = 0$$

$$x_5 = 2\pi/3 \quad \cos^2(2\pi) - 2\cos(2\pi/3) = 2$$

$$x_6 = 5\pi/6 \quad \cos^2(5\pi/2) - 2\cos(5\pi/6) = \sqrt{3}$$

$$x_7 = \pi \quad \cos^2(3\pi) - 2\cos(\pi) = 1$$



Ответ: $\pm \pi/3 + 2\pi t; \pm \pi/2 + \pi t$