

$$\cos x + \cos y = \frac{1}{2}$$
$$\sin^2 x + \sin^2 y = \frac{7}{4}$$

$$\cos x + \cos y = \frac{1}{2}$$
$$1 - \cos^2 x + 1 - \cos^2 y = \frac{7}{4}$$

$$a + b = \frac{1}{2}$$
$$2 - a^2 - b^2 = \frac{7}{4}$$

$$b = \frac{1}{2} - a$$
$$8 - 4a^2 - 4b^2 = 7$$
$$8 - 4a^2 - 4(\frac{1}{2} - a)^2 = 7$$
$$8 - 4a^2 - 4(\frac{1}{4} - a + a^2) = 7$$
$$8 - 4a^2 - 1 + 4a - 4a^2 = 7$$
$$7 - 8a^2 + 4a = 7$$
$$8a^2 - 4a = 0$$
$$4a(2a - 1) = 0$$
$$a = 0 \text{ или } \frac{1}{2}$$
$$b = \frac{1}{2} \text{ или } 0$$

$$\cos x = 0$$
$$x = \frac{\pi}{2} + \pi k$$
$$\cos y = \frac{1}{2}$$
$$y = \pm \frac{\pi}{3} + 2\pi k$$
$$\cos y = 0$$
$$y = \frac{\pi}{2} + \pi k$$
$$\cos x = \frac{1}{2}$$
$$x = \pm \frac{\pi}{3} + 2\pi k$$

Ответ: $(\frac{\pi}{2} + \pi k; \pm \frac{\pi}{3} + 2\pi k)$ $(\pm \frac{\pi}{3} + 2\pi k; \frac{\pi}{2} + \pi k)$