

$$|\sin x| \cdot \sin y = -\frac{1}{4}$$

$$\cos(x+y) + \cos(x-y) = \frac{3}{2}$$

$$x \in (0; 2\pi), y \in (\pi; 2\pi)$$

первый случай - $x \in (0; \pi)$ $y \in (\pi; 2\pi)$

$$\sin x \sin y = -\frac{1}{4}$$

$$\cos(x+y) + \cos(x-y) = \frac{3}{2}$$

$$\cos x \cos y - \sin y \sin x + \cos x \cos y + \sin y \sin x = \frac{3}{2}$$

$$\sin x \sin y = -\frac{1}{4}$$

$$\cos x \cos y = \frac{3}{4}$$

$$\cos(x-y) = -\frac{1}{4} + \frac{3}{4}$$

$$\cos(x+y) = \frac{3}{4} + \frac{1}{4}$$

$$x-y = \pm \frac{\pi}{3} + 2\pi k$$

$$x+y = 2\pi n$$

$$x = \pm \frac{\pi}{6} + \pi k + \pi n \quad x_1 = \frac{\pi}{6} \quad x_2 = -\frac{\pi}{6} + \pi$$

$$y = \pi n \pm \frac{\pi}{6} - \pi k \quad y_1 = \frac{\pi}{6} + \pi \quad y_2 = -\frac{\pi}{6} + 2\pi$$

Второй случай - $x \in (\pi; 2\pi)$ $y \in (\pi; 2\pi)$

$$\sin x \sin y = \frac{1}{4}$$

$$\cos x \cos y = \frac{3}{4}$$

$$\cos(x-y) = \frac{1}{4} + \frac{3}{4}$$

$$\cos(x+y) = \frac{3}{4} - \frac{1}{4}$$

$$x-y = 2\pi k$$

$$x+y = \pm \frac{\pi}{3} + 2\pi n$$

$$x = \pm \frac{\pi}{6} + \pi k + \pi n \quad x_1 = \frac{\pi}{6} + \pi \quad x_2 = -\frac{\pi}{6} + 2\pi$$

$$y = \pi n \pm \frac{\pi}{6} - \pi k \quad y_1 = \frac{\pi}{6} + \pi \quad y_2 = -\frac{\pi}{6} + 2\pi$$

Ответ: $(\frac{\pi}{6}; \frac{\pi}{6} + \pi)$; $(\frac{\pi}{6}; -\frac{\pi}{6} + 2\pi)$; $(-\frac{\pi}{6} + \pi; \frac{\pi}{6} + \pi)$; $(-\frac{\pi}{6} + \pi; -\frac{\pi}{6} + 2\pi)$
 $(\frac{\pi}{6} + \pi; \frac{\pi}{6} + \pi)$; $(\frac{\pi}{6} + \pi; -\frac{\pi}{6} + 2\pi)$; $(-\frac{\pi}{6} + 2\pi; \frac{\pi}{6} + \pi)$; $(-\frac{\pi}{6} + 2\pi; -\frac{\pi}{6} + 2\pi)$

$$|x| = \begin{cases} x, & x > 0 \\ -x, & x \leq 0 \end{cases}$$