

$$\sin x - \sin y = \frac{1}{2}$$
$$\cos x + \cos y = \frac{\sqrt{3}}{2}$$

$$\cos\left(\frac{x+y}{2}\right) \cdot \sin\left(\frac{x-y}{2}\right) = \frac{1}{4}$$
$$\cos\left(\frac{x+y}{2}\right) \cdot \cos\left(\frac{x-y}{2}\right) = \frac{\sqrt{3}}{4}$$
$$\operatorname{tg}\left(\frac{x-y}{2}\right) = \frac{1}{\sqrt{3}}$$

$$x-y = \frac{\pi}{3} + 2\pi k$$
$$\frac{x-y}{2} = \frac{\pi}{6} + \pi k$$

1-ый случай  $\frac{x-y}{2} = \frac{\pi}{6} + 2\pi k$

$$\cos\left(\frac{x+y}{2}\right) \cdot \frac{1}{2} = \frac{1}{4}$$
$$\cos\left(\frac{x+y}{2}\right) = \frac{1}{2}$$
$$\frac{x+y}{2} = \pm \frac{\pi}{3} + 2\pi h$$

$$x+y = \pm \frac{2\pi}{3} + 4\pi h$$
$$x-y = \frac{\pi}{3} + 4\pi k$$

$$x = \frac{\pi}{2} + 2\pi(k+h)$$
$$x = -\frac{\pi}{6} + 2\pi(k+h)$$

$$y = -\frac{\pi}{2} + 2\pi(h-k)$$
$$y = \frac{\pi}{6} + 2\pi(h-k)$$

2-ой случай  $\frac{x-y}{2} = \frac{7\pi}{6} + 2\pi k$

$$\cos\left(\frac{x+y}{2}\right) = -\frac{1}{2}$$
$$\frac{x+y}{2} = \pm \frac{2\pi}{3} + 2\pi h$$

$$x+y = \pm \frac{4\pi}{3} + 4\pi h$$
$$x-y = \frac{\pi}{3} + 4\pi k$$
$$2x = \frac{\pi}{3} + \frac{4\pi}{3} + 4\pi(h+k)$$
$$2y = \pm \frac{4\pi}{3} + 4\pi(h-k) - \frac{\pi}{3}$$

$$x = \frac{\pi}{6} + \frac{2\pi}{3} + 2\pi(h+k)$$
$$y = \pm \frac{2\pi}{3} + 2\pi(h-k) - \frac{\pi}{6}$$

Ответ  $(\frac{\pi}{6} + \frac{2\pi}{3} + 2\pi(h+k); \pm \frac{2\pi}{3} + 2\pi(h-k) - \frac{\pi}{6})$   
 $(\frac{\pi}{2} + 2\pi(k+h); -\frac{\pi}{2} + 2\pi(h-k))$   $(\frac{\pi}{2} + 2\pi(k+h); \frac{\pi}{6} + 2\pi(h-k))$   
 $(-\frac{\pi}{6} + 2\pi(k+h); -\frac{\pi}{2} + 2\pi(h-k))$   $(-\frac{\pi}{6} + 2\pi(k+h); \frac{\pi}{6} + 2\pi(h-k))$