

$$\cos x \sin(x/4) + 9/10 \sin x + 2 \sin(x/4) \cos(x/2) + \sin(x/4) - \frac{1}{2} \cos(x/4) - 9/20 = 0$$

x лежит в $[-9P/2; -3P/2]$

$$\cos x \sin x/4 + 2 \sin x/4 \cos x/2 + \sin x/4 + 9/10 \sin x - \frac{1}{2} \cos x/4 - 9/20 = 0$$

$$\sin x/4 (\cos x + 2 \cos x/2 + 1) + 9/10 \sin x - \frac{1}{2} \cos x/4 - 9/20 = 0$$

$$\sin x/4 (2 \cos^2 x/2 - 1 + 2 \cos x/2 + 1) + 9/10 \sin x - \frac{1}{2} \cos x/4 - 9/20 = 0$$

$$\sin x/4 (2 \cos^2 x/2 + 2 \cos x/2) + 9/10 \sin x - \frac{1}{2} \cos x/4 - 9/20 = 0$$

$$\sin x/4 (2 \cos x/2 (\cos x/2 + 1)) + 9/10 \sin x - \frac{1}{2} \cos x/4 - 9/20 = 0$$

$$\sin x/4 (2 \cos x/2 * 2 (\cos x/2 + 1)/2) + 9/10 \sin x - \frac{1}{2} \cos x/4 - 9/20 = 0$$

$$\sin x/4 * 2 \cos x/2 * 2 \cos^2 x/4 - \frac{1}{2} \cos x/4 + 9/10 \sin x - 9/20 = 0$$

$$\cos x/4 (4 \sin x/4 * \cos x/4 * \cos x/2 - \frac{1}{2}) + 9/10 \sin x - 9/20 = 0$$

$$\cos x/4 (2 \sin x/2 * \cos x/2 - \frac{1}{2}) + 9/10 \sin x - 9/20 = 0$$

$$\cos x/4 (\sin x - \frac{1}{2}) + 9/10 \sin x - 9/20 = 0$$

$$\cos x/4 (\sin x - \frac{1}{2}) + 9/10 (\sin x - \frac{1}{2}) = 0$$

$$(\sin x - \frac{1}{2})(\cos x/4 + 9/10) = 0$$

$$\sin x = \frac{1}{2}$$

$$x = P/6 + 2Pk$$

$$x = 5P/6 + 2Pk$$

$$\cos x/4 = -9/10$$

$$x/4 = \pm \arccos(-9/10) + 2Pk$$

$$x = \pm 4 \arccos(-9/10) + 8Pk$$

$$-9P/2 - P/6 \leq 2Pk \leq -3P/2 - P/6$$

$$-9/4 - 1/12 \leq k \leq -3/4 - 1/12$$

$$-28/12 \leq k \leq -10/12$$

$$-7/3 \leq k \leq -5/6$$

$$k = -2, -1$$

$$x = P/6 + 2P(-2) = P/6 - 4P = -23P/6$$

$$x = P/6 + 2P(-1) = x = P/6 - 2P = -11P/6$$

$$-9P/2 \leq 5P/6 + 2Pk \leq -3P/2$$

$$-9/2 - 5/6 \leq 2k \leq -3/2 - 5/6$$

$$-33/12 \leq k \leq -14/12$$

$$-11/4 \leq k \leq -7/6$$

$$k = -2$$

$$x = 5P/6 - 4P = -19P/6$$

$$-9/16 - 4 \arccos(-9/10)/8P \leq k \leq -3/16 - 4 \arccos(-9/10)/8P$$

$$-9/16 - \arccos(-9/10)/2P \leq k \leq -3/16 - \arccos(-9/10)/2P$$

$$k = -1$$

$$x = 4 \arccos(-9/10) - 8P$$

$$\arccos(-9/10) = P \Rightarrow -4P$$

$$\arccos(-9/10) = 5P/6 \Rightarrow 4 * 5P/6 - 8P = 10P/3 - 8P = -14P/3$$

не годятся по левой границе

$$-9/16 + \arccos(-9/10)/P \leq k \leq -3/16 + \arccos(-9/10)/P$$

$$k = 0$$

$$x = -4 \arccos(-9/10)$$

ответ $x = -4 \arccos(-9/10); 5P/6 - 4P = -19P/6; -11P/6; -23P/6$.