

$$\sin x + \cos 5x = 2$$

$$\sin x = 1$$

$$x = P/2 + 2Pn$$

$$\cos 5x = 1$$

$$5x = 2Pk$$

$$x = 2Pk/5$$

$$P/2 + 2Pn = 2Pk/5 \quad | \cdot 10/P$$

$$5 + 20n = 4k$$

$$4k - 20n = 5$$

$$\text{Nod}(4, 20) = 4$$

Тк 5 на 4 не делится решения нет

$$\sin(x/2) + \cos 2x = 2$$

$$\sin(x/2) = 1$$

$$x/2 = P/2 + 2Pn$$

$$x = P + 4Pn$$

$$\cos 2x = 1$$

$$2x = 2Pk$$

$$x = Pk$$

$$P + 4Pn = Pk \quad | /wP$$

$$1 + 4n = k$$

$$k - 4n = 1$$

$$\text{Nod}(1, 4) = 1$$

$$n_0 = 1$$

$$k_0 = 5$$

$$ak_0 + bn_0 = 1$$

$$a(k_0 + U) + b(n_0 + W) = 1$$

$$ak_0 + aU + bn_0 + bW = 1$$

$$aU + bW = 0$$

$$aU = -bW$$

$$U = bt$$

$$abt = -b(-at)$$

$$W = -at$$

$$k = U + k_0 = \\ = k_0 + bt$$

$$n = W + n_0 = \\ = n_0 - at$$

$$k - 4n = 1 \quad a = 1 \quad b = -4$$

$$n_0 = 1$$

$$k_0 = 5$$

$$k = 5 - 4t$$

$$n = 1 - t$$

$$x = Pk = P(5 - 4t) = 5P - 4Pt$$

$$\text{Ответ: } 5P - 4Pt$$