

$$\cos^4 x + \cos^4 x = 1 + \cos 2x - 2\sin^2 2x$$

$$\cos^4 x = y$$

$$\cos^4 x = 1/y$$

$$y \in (0; 1]$$

$$y + 1/y \in [2; +\infty)$$

$$\cos^4 x + \cos^4 x \geq 2$$

$$a = (y + 1/y) \text{ ? при условии } y \in (0; 1]$$

$$a \in (-\infty; -2] \cup [2; +\infty)$$

$$\cos^4 x = 1 / \cos^4 x = 1/y$$

$$f(x) = 1 + \cos 2x - 2\sin^2 2x =$$

$$1 + \cos 2x - 2(1 - \cos^2(2x)) =$$

$$= 1 + \cos 2x - 2 + 2\cos^2(2x)$$

$$= 2\cos^2(2x) + \cos 2x - 1$$

$$\sin^2(2x) + \cos^2(2x) = 1$$

$$\cos 2x = t, t \in [-1; 1]$$

$$f(t) = 2t^2 + t - 1$$

$$x_0 = -1/4$$

$$f(-1/4) = 2/16 - 1/4 - 1 = 1/8 - 1/4 - 1 = -1/8 - 1 = -9/8$$

$$2 \geq 1 + \cos 2x - 2\sin^2 2x \geq -9/8$$

$$f(1) = 2 + 1 - 1 = 2$$

$$y + 1/y = a$$

$$(y^2 + 1)/y = a$$

$$(y^2 + 1 - ay)/y = 0$$

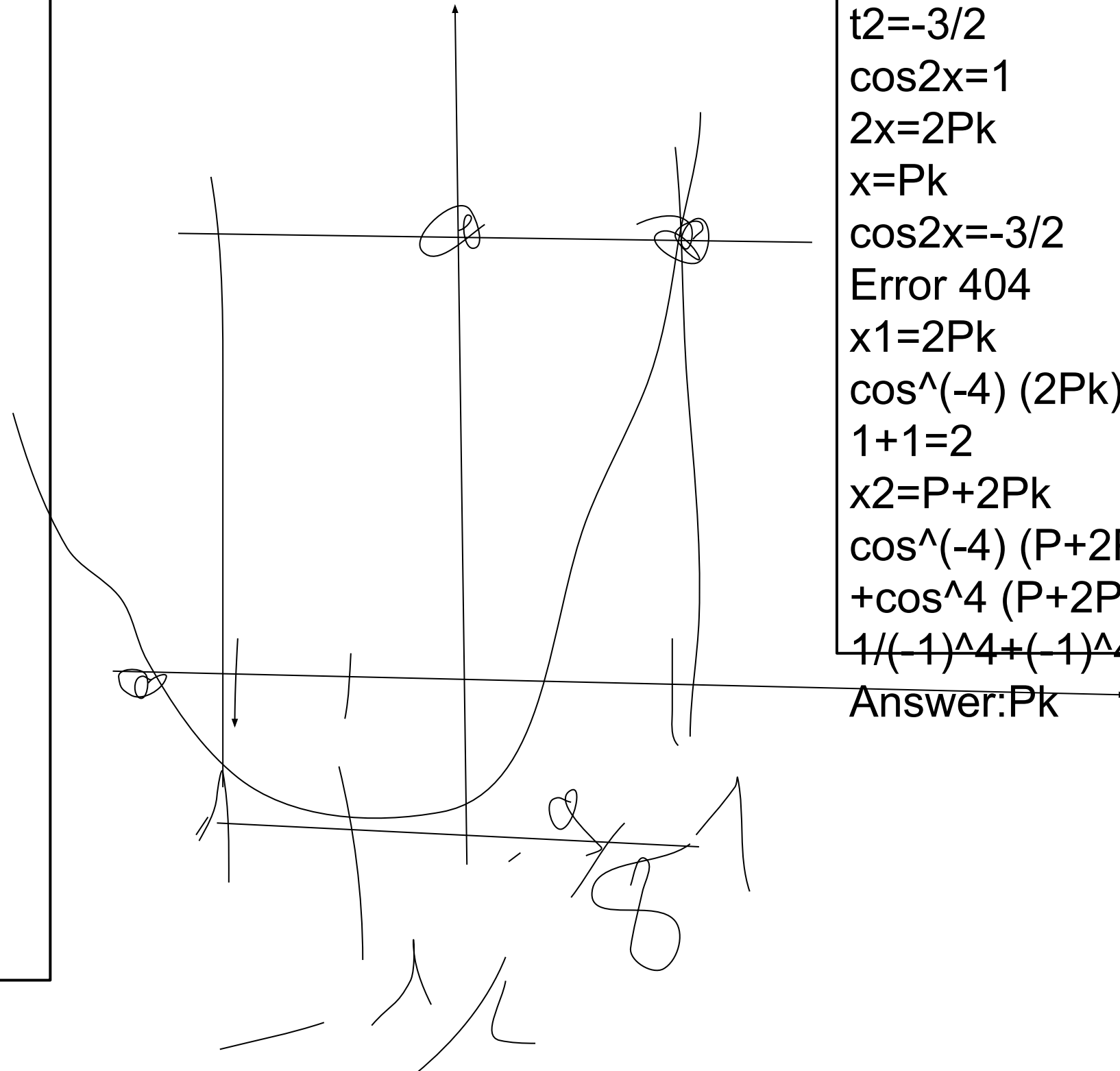
$$D = a^2 - 4 = (a-2)(a+2)$$

$$y_1 = (a + \sqrt{(a-2)(a+2)})/2$$

$$y_2 = (a - \sqrt{(a-2)(a+2)})/2$$

$$(a-2)(a+2) \geq 0$$

$$a \in (-\infty; -2] \cup [2; +\infty)$$



$$2\cos^2(2x) + \cos 2x - 1 = 2$$

$$2t^2 + t - 1 = 2$$

$$2t^2 + t - 3 = 0$$

$$t_1 = 1$$

$$t_2 = -3/2$$

$$\cos 2x = 1$$

$$2x = 2Pk$$

$$x = Pk$$

$$\cos 2x = -3/2$$

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$$x_1 = 2Pk$$

$$\cos^4(2Pk) + \cos^4(2Pk) = 2$$

$$1 + 1 = 2$$

$$x_2 = P + 2Pk$$

$$\cos^4(P + 2Pk) +$$

$$+ \cos^4(P + 2Pk) = 2$$

$$1/(-1)^4 + (-1)^4 = 2$$

Answer: Pk