

$$\arcsin x * \arccos x = -1$$

$$\arcsin x \in [-\pi/2; \pi/2]$$

$$\arccos x \in [0; \pi]$$

$$-1 \leq x \leq 1$$

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$$(\pi/2 - \arccos x) \arccos x = -1$$

$$\pi/2 \arccos x - \arccos^2 x + 1 = 0$$

$$\arccos x = t$$

$$-t^2 + \pi/2 t + 1 = 0$$

$$t^2 - \pi/2 t - 1 = 0$$

$$D = \pi^2/4 + 4 = (\pi^2 + 16)/4$$

$$t = (\pi/2 + \sqrt{(\pi^2 + 16)}/2) / 2 = \pi/4 + \sqrt{(\pi^2 + 16)}/4 =$$

$$(\pi + \sqrt{(\pi^2 + 16)})/4$$

$$t = (\pi - \sqrt{(\pi^2 + 16)})/4$$

$$\arccos x \in [0; \pi]$$

$$\arccos x = (\pi + \sqrt{(\pi^2 + 16)})/4 \text{ -- подходит}$$

$$\arccos x = (\pi - \sqrt{(\pi^2 + 16)})/4 \text{ -- отриц -- не}$$

подходит

$$\arccos x = (\pi + \sqrt{(\pi^2 + 16)})/4 \text{ \\\cos}$$

$$x = \cos((\pi + \sqrt{(\pi^2 + 16)})/4)$$

$$\sqrt{1 - \operatorname{ctg} x} = \cos x - \sin x$$

$$\cos x - \sin x = \sqrt{2} \sin(x + 3\pi/4)$$

$$\sqrt{2} \sin(x + 3\pi/4) \geq 0$$

$$\sin(x + 3\pi/4) \geq 0$$

$$2\pi k \leq x + 3\pi/4 \leq \pi + 2\pi k$$

$$2\pi k - 3\pi/4 \leq x \leq \pi/4 + 2\pi k$$

$$1 - \operatorname{ctg} x = \cos^2 x - 2\cos x \sin x + \sin^2 x$$

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$$1 - \operatorname{ctg} x = 1 - 2\cos x \sin x$$

$$\operatorname{ctg} x = 2\cos x \sin x$$

$$\operatorname{ctg} x - 2\cos x \sin x = 0$$

$$\cos x (1/\sin x - 2\sin x) = 0$$

$$\cos x = 0$$

$$x = \pi/2 + \pi k$$

$$1/\sin x - 2\sin x = 0$$

$$1 - 2\sin^2 x = 0$$

$$\sin x \neq 0$$

$$1 - (1 - \cos 2x) = 0$$

$$\cos 2x = 0$$

$$2x = \pi/2 + \pi k$$

$$x = \pi/4 + \pi k/2$$

Ответ  $x = \pi/4 + \pi k; -\pi/2 + 2\pi k; -\pi/4 + 2\pi k.$

АРКИ УРАВНЕНИЯ 08

$$\arcsin x * \arccos x = -1$$

$$\sqrt{5} = 2$$
$$2 \geq 0$$
$$\sqrt{5} = 2^2$$

