Fábián T. Nikolett RDD2XA

(2a)

$x^2 = 25 \quad * \quad x = 5$

$\Leftarrow \quad -5$

(2c)

$a^2 + b^2 = 0 \quad * \quad ab = 0$

$\Rightarrow \quad a = 0, \; b = 1$

(2e)

$x^3 - x^2 - x + 1 = 0 \quad * \quad x = 1$

$-x^2(-x+1) + (-x+1)$

$(1 - x^2)(1 - x) = 0$

$\Leftarrow \quad x = \pm 1$

(2i)

$|x| = x \quad * \quad x \geq 0$

$\Leftrightarrow$

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2.)

$\sin 2x = \operatorname{tg} x \quad * \quad x = \frac{\pi}{4} + k\frac{\pi}{2}$

k páros
$a = \frac{k}{2}$

$\sin\left(2\left(\frac{\pi}{4} + a\pi\right)\right) = \sin\left(\frac{\pi}{2} + 2a\pi\right) = 1$

$\operatorname{tg}\left(\frac{\pi}{4} + a\pi\right) = 1$

↳ $1 = 1$ igaz

k páratlan
$a = \frac{k-1}{2}$

$\sin\left(2\left(\frac{3\pi}{4} + a\pi\right)\right) = \sin\left(\frac{3\pi}{2} + 2a\pi\right) = -1$

$\operatorname{tg}\left(\frac{3\pi}{4} + a\pi\right) = -1$

↳ $-1 = -1$ igaz

$\Rightarrow$ $\Leftarrow$ igaz

$\sin 2x = \operatorname{tg} x$

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

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

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

↳ $\sin x = 0 \Rightarrow x = 0 + k\pi$ hamis

$2\cos^2 x - 1 = 0 \Rightarrow \cos^2 x = \frac{1}{2} \Rightarrow \cos x = \pm\frac{1}{\sqrt{2}} \Rightarrow x = \frac{\pi}{4} + k\frac{\pi}{2}$ igaz

$\Rightarrow$ $\Rightarrow$ hamis

$x = \Leftarrow$