

Warm-up:

Solve over $[0, 2\pi)$.

$$\cos x \cot x + \cot x = 0$$

$$\cot x (\cos x + 1) = 0$$

$$\cot x = 0 \quad \cos x + 1 = 0$$

$$x = \frac{\pi}{2}, \frac{3\pi}{2} \quad \cos x = -1$$

$$x = \pi$$

Select the correct answer:

~~A) $\frac{\pi}{2}, \frac{3\pi}{2}, \pi$~~

B) $\frac{\pi}{2}, \frac{3\pi}{2}$

C) π

D) none of the above

check: $-1 \cdot \phi + \phi = \phi$

Extra Example:

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

$$\cos^2 x - 1 = 0 \quad \cot x + 1 = 0$$

$$\sqrt{\cos^2 x} = \pm 1 \quad \cot x = -1$$

$$\cos x = \pm 1$$

$$x = 0, \pi$$

$$x = \frac{3\pi}{4}, \frac{7\pi}{4}$$

Extraneous Solution?

1. Does your solution land on the x- or y-axis?

$$0\pi, \frac{\pi}{2}, \pi, \frac{3\pi}{2}$$

2. Does your original equation have Tangent, Cosecant, Secant, Cotangent?

