

# Involute Function

## direct and inverse calculation

$$\text{inv}(x) := \tan(x) - x$$

$$\alpha := 17.58^\circ = 0.307$$

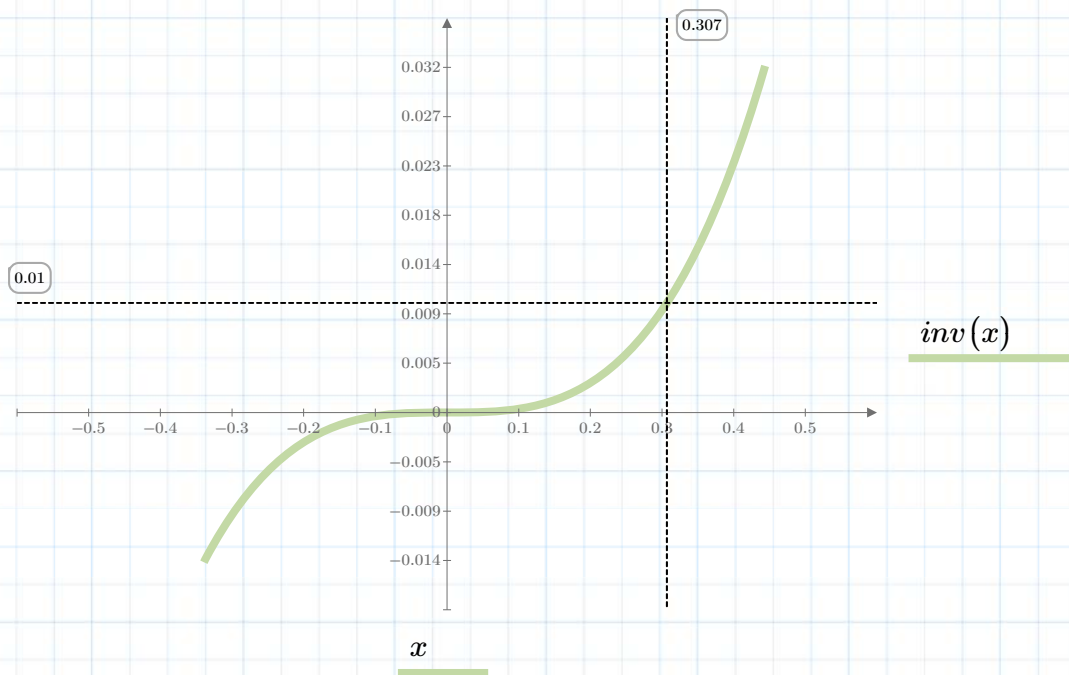
$$w := .01$$

$$\text{inv}(\alpha) = 0.01000565$$

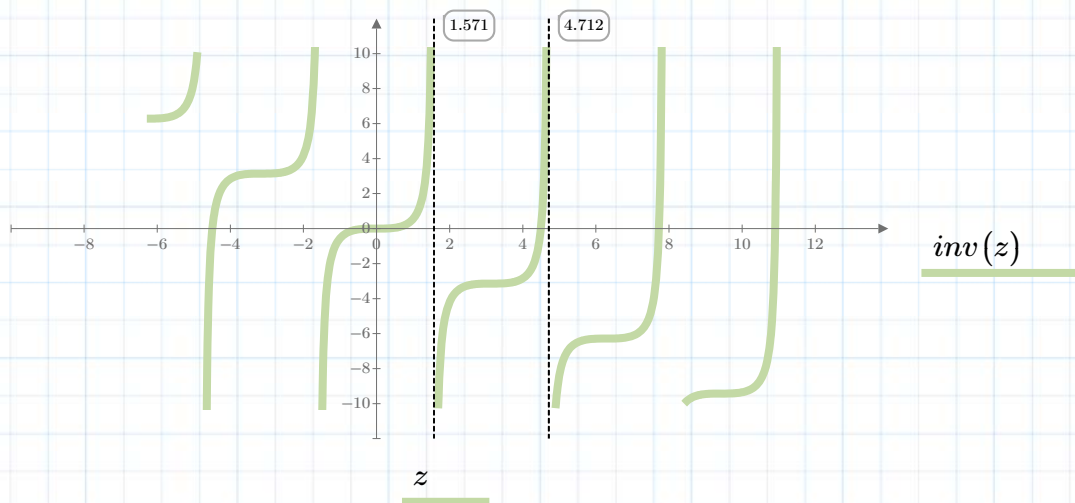
$$\alpha_{\text{sol}} := \text{root}(\text{inv}(x) - w, x, -1, 1) = 0.307$$

$$\alpha_{\text{sol}} = 17.57677^\circ$$

$$\text{inv}(\alpha_{\text{sol}}) = 0.01$$



$$z := -2\pi, -2\pi + .01..3.5\pi$$



$$dudley(y) := \text{if} \left( y < .5, 1.441 \cdot y^{\frac{1}{3}} - 0.366 \cdot y, 0.243 \pi + 0.371 \cdot y \right)$$

