

Tečna a normála

$$f(x) = \frac{\pi}{4} + 3 \arctg \sqrt{2 - e^{2x}} \quad T = [0, \pi]$$

$$I) f(0) = \frac{\pi}{4} + 3 \arctg \sqrt{2 - e^0} = \frac{\pi}{4} + 3 \arctg 1 = \frac{\pi}{4} + 3 \frac{\pi}{4} = \pi$$

$$II) f'(x) = 3 \cdot \frac{1}{1 + (2 - e^{2x})} \cdot \frac{1}{2\sqrt{2 - e^{2x}}} \cdot (-e^{2x}) \cdot 2$$

$$III) \underline{f'(0)} = \frac{3}{3 - 1} \cdot \frac{1}{1} \cdot (-1) = \underline{\underline{-\frac{3}{2}}}$$

$x:$   $y - \pi = -\frac{3}{2}(x - 0)$

$$y - \pi = -\frac{3}{2}x$$

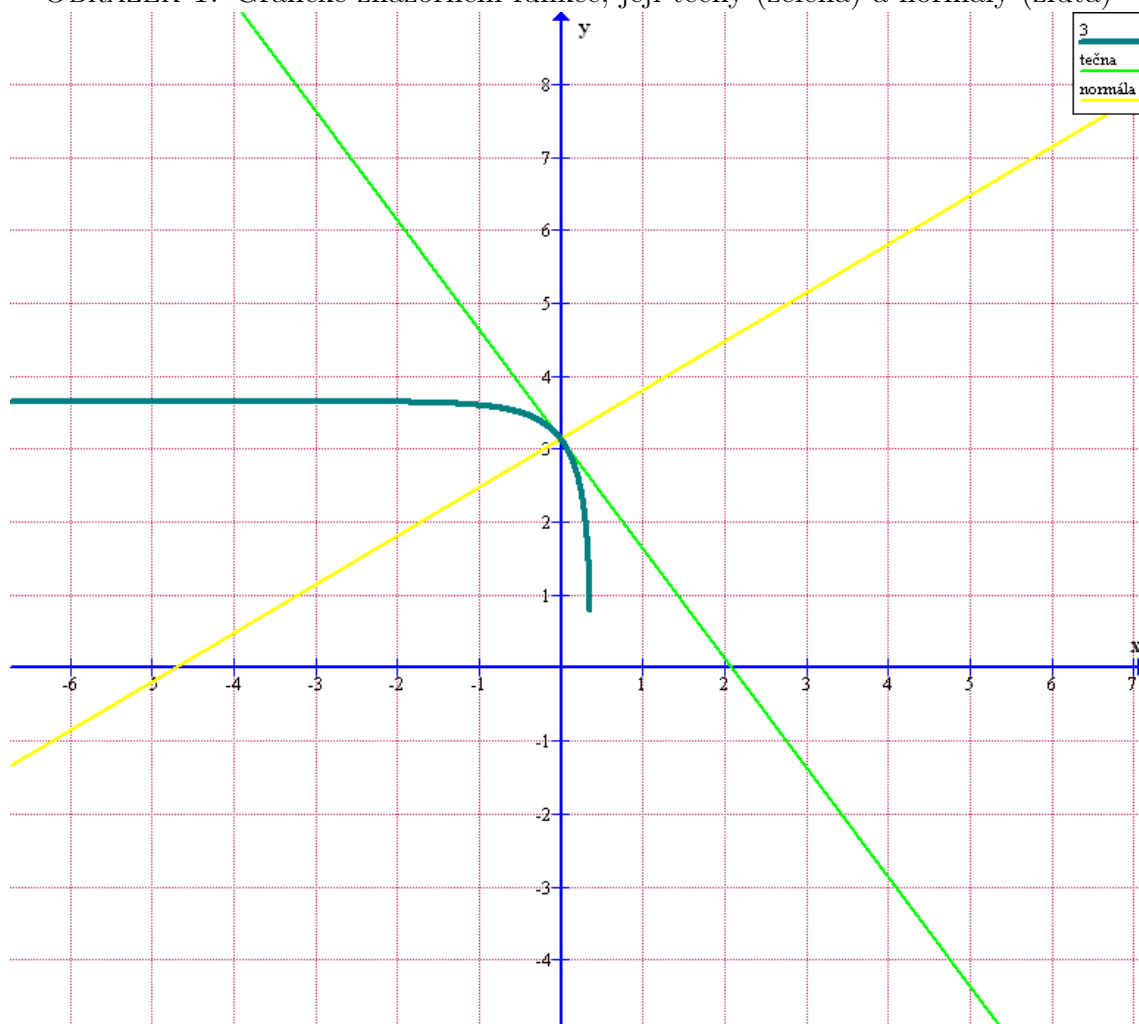
$$0 = 3x + 2y - 2\pi$$

$w:$   $y - \pi = \frac{2}{3}(x - 0)$

$$y - \pi = \frac{2}{3}x$$

$$0 = 2x - 3y + 3\pi$$

OBRÁZEK 1. Grafické znázornění funkce, její tečny (zelená) a normály (žlutá)



Zdroj: program Graph