

ROVNICE TEČNY: k funkci f , v bodě (x_0, y_0)

$$(y - y_0) = f'(x_0) \cdot (x - x_0)$$

ROVNICE NORMÁLY: k funkci f , v bodě (x_0, y_0)

$$(y - y_0) = \frac{1}{f'(x_0)} (x - x_0)$$

10. Nalezněte rovnici tečny a normály k funkci $y = \sqrt{4 - x^2}$, v bodě $x_0 = \sqrt{2}$.

$$f'(x) = \frac{1}{2} \cdot \frac{(-1) \cdot 2x}{\sqrt{4 - x^2}} = \frac{-x}{\sqrt{4 - x^2}}$$

$$f'(x_0) = f'(\sqrt{2}) = \frac{-1 \cdot \sqrt{2}}{\sqrt{4 - 2}} = \frac{-\sqrt{2}}{\sqrt{2}} = -1$$

$$y_0 = \sqrt{4 - x_0^2} = \sqrt{4 - 2} = \sqrt{2}$$

Tečna: $(y - y_0) = f'(x_0) \cdot (x - x_0)$

$$(y - \sqrt{2}) = -1 \cdot (x - \sqrt{2})$$

$$\underline{\underline{y = -x + 2\sqrt{2}}}$$

Normála: $(y - y_0) = \frac{1}{f'(x_0)} (x - x_0)$

$$(y - \sqrt{2}) = 1 \cdot (x - \sqrt{2})$$

$$\underline{\underline{y = x}}$$