



Podobnost $\frac{x}{y} = \frac{x-4}{5}$

$$y = \frac{5x}{x-4}$$

$$x > 4$$

$$y > 5$$

$$D(\alpha) = x + y$$

$$D(\alpha) = x + \frac{5x}{x-4}$$

$$D(\alpha) = \frac{x^2 - 4x + 5x}{x-4}$$

$$D(\alpha) = \frac{x^2 + x}{x-4}$$

$$D'(\alpha) = \frac{(x^2+x)' \cdot (x-4) - (x^2+x)(x-4)'}{(x-4)^2}$$

$$D'(\alpha) = \frac{(2x+1)(x-4) - (x^2+x)}{(x-4)^2} = \frac{2x^2 - 7x - 4 - x^2 - x}{(x-4)^2}$$

$$D'(\alpha) = \frac{x^2 - 8x - 4}{(x-4)^2}$$

Extrémy:

$$x_1 = 4$$

$$x^2 - 8x - 4 = 0$$

$$\frac{8 \pm \sqrt{64 + 16}}{2} \quad \begin{cases} 4 + \sqrt{20} = x_2 \\ 4 - \sqrt{20} = x_3 \end{cases}$$

parametrické vyjádření přímky:

$$p: \begin{cases} x = 4 + (4 + \sqrt{20})t \\ y = 3 + (4 + \sqrt{5})t \end{cases}$$

$$\begin{array}{c} 4 - \sqrt{20} \quad - \quad 4 \quad - \quad 4 + \sqrt{20} \end{array}$$

↑
lokální minimum

$$\begin{aligned} D(\alpha) &= x + \frac{5x}{x-4} \\ &= 4 + \sqrt{20} + \frac{5(4 + \sqrt{20})}{\sqrt{20}} \\ &= 9 + 4\sqrt{5} \end{aligned}$$