

2) Tečná rovina a normála

$$f(x, y) = y \cdot \ln(3x - y)$$

$$T = [1, 2, ?]$$

1) Dopolnění souřadnice bodu T

$$f'(1, 2) = 2 \cdot \ln(3 \cdot 1 - 2) = 2 \cdot \underbrace{\ln 1}_0 = 0$$

$$T = [1, 2, 0]$$

11) Parciální derivace + p. der. v bodě T

$$a) \frac{\partial f}{\partial x} = y \cdot \frac{1}{3x - y} \cdot 3 = \frac{3y}{3x - y}$$

$$\frac{\partial f}{\partial x|_T} = \frac{3 \cdot 2}{3 \cdot 1 - 2} = \underline{\underline{6}}$$

$$b) \frac{\partial f}{\partial y} = 1 \cdot \ln(3x - y) + y \cdot \frac{1}{3x - y} \cdot (-1) = \ln(3x - y) - \frac{y}{3x - y}$$

$$\frac{\partial f}{\partial y|_T} = \underbrace{\ln(3 - 2)}_0 - \frac{2}{3 - 2} = -2$$

$$T: z - 0 = 6(x - 1) + (-2)(y - 2)$$

$$\underline{\underline{z = 6x - 2y - 2}}$$

$$m: x = 1 + 6t$$

$$y = 2 - 2t$$

$$z = 0 - t$$