

2) Tečna rovina a normála

$$f(x, y) = y + xe^{\frac{y}{x}}$$

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

1) Tečný bod - dopočtení souřadnice

$$f(1, 0) = 0 + 1e^0 = 1$$

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

$$1) \frac{\partial f}{\partial x} = 1 \cdot e^{\frac{y}{x}} + xe^{\frac{y}{x}} \cdot y \cdot \left(-\frac{1}{x^2}\right) = e^{\frac{y}{x}} - \frac{y}{x} e^{\frac{y}{x}}$$

$$\frac{\partial f}{\partial x} \Big|_T = e^0 - 0 \cdot e^0 = \underline{1}$$

$$\frac{\partial f}{\partial y} = 1 + \cancel{xe^{\frac{y}{x}}} \cdot \frac{1}{x} = 1 + e^{\frac{y}{x}}$$

$$\frac{\partial f}{\partial y} \Big|_T = 1 + e^0 = 1 + 1 = \underline{2}$$

$$\tau: y - 1 = 1(x - 1) + 2(y - 0)$$

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

$$w: x = 1 + t$$

$$y = 0 + 2t$$

$$z = 1 - t$$