

Taylorův polynom 3. stupně

$$f(x) = x^2 - 2x + 1 + \cos(3x)$$

$$a = 0$$

$$f(0) = 0^2 - 2 \cdot 0 + 1 + \cos 0 = 1 + 1 = \underline{2}$$

$$f'(x) = 2x - 2 - 3 \sin 3x$$

$$f'(0) = -2 - 3 \cdot \sin 0 = \underline{\underline{-2}}$$

$$f''(x) = 2 - 3 \cdot \cos 3x \cdot 3 = 2 - 9 \cos 3x$$

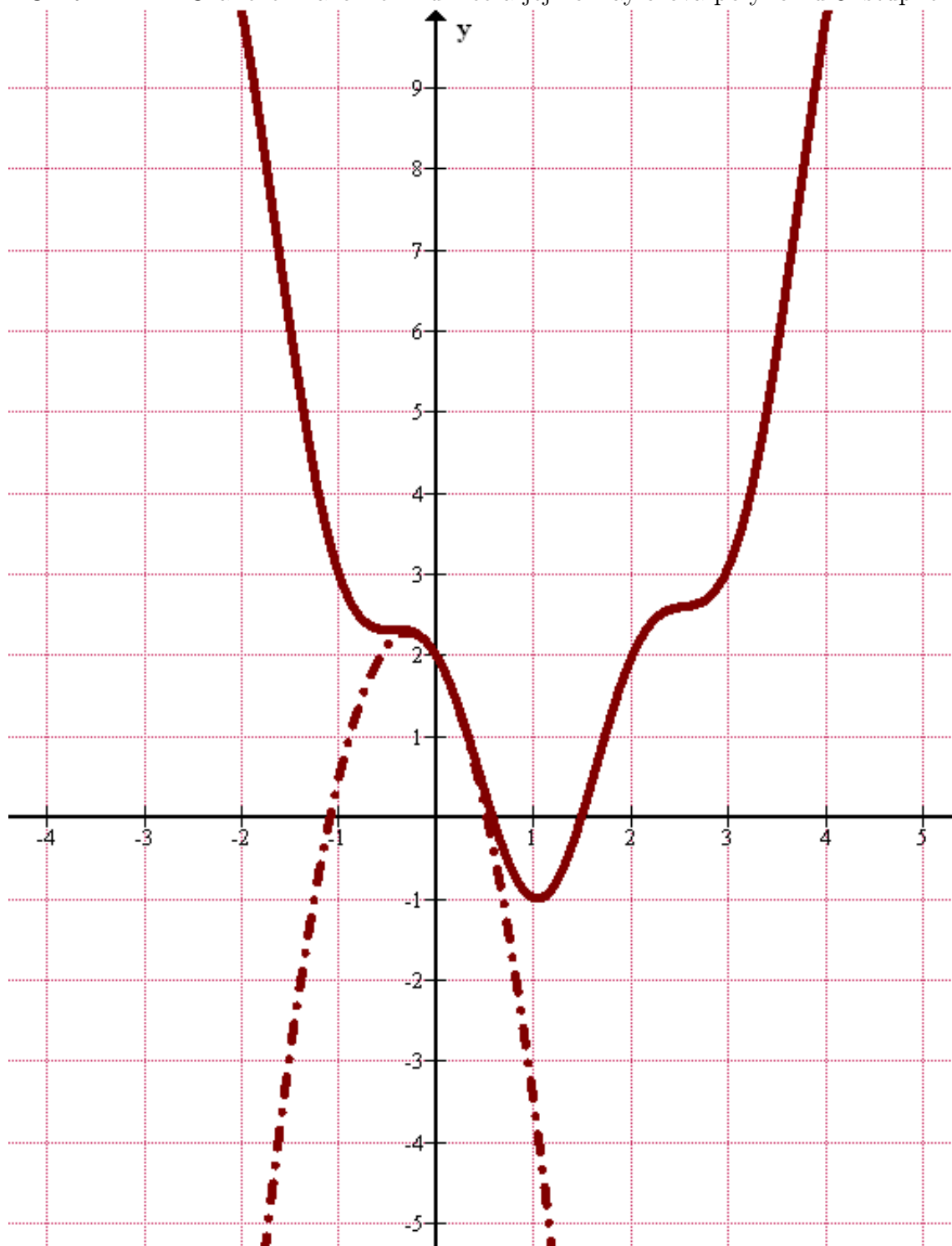
$$f''(0) = 2 - 9 \cdot \cos 0 = 2 - 9 \cdot 1 = -7$$

$$f'''(x) = +6 \cdot 3 \cdot \sin 3x = 18 \sin 3x$$

$$f'''(0) = 18 \cdot 0 = \underline{\underline{0}}$$

$$T_3: 2 + \frac{-2}{1!} (x)^1 + \frac{-7}{2!} (x)^2 + \frac{0}{3!} (x)^3 = \underline{\underline{2 - 2x - \frac{7}{2}x^2}}$$

OBRÁZEK 1. Grafické znázornění funkce a jejího Taylorova polynomu 3. stupně



Zdroj: program Graph