

11

A

$$\tilde{x} = 1,5$$

$$\Delta \tilde{x} = 0,05$$

$$f(x) = 125x^4 - x^3 + 1,5x^2 - 2x + 4,5$$

$$x \in [1,45, 1,55]$$

$$f'(x) = 5x^3 - 3x^2 + 3x - 2$$

$$\Delta f(\tilde{x}) = |f'(\tilde{x})| \Delta \tilde{x}$$

$$\Delta f(1,5) = |5x^3 - 3x^2 + 3x - 2| \cdot 0,05$$

$$\Delta f(1,5) = 0,63125$$

$$f(1,5) = 7,828125$$

$$f(x) \in [f(\tilde{x}) - \Delta f(\tilde{x}), f(\tilde{x}) + \Delta f(\tilde{x})]$$

$$f(x) \in [7,196875, 8,459375]$$



③

$$\tilde{x} = \frac{\pi}{4} \quad \Delta \tilde{x} = 0,065$$

$$f(x) = \cos(x) \cdot \ln(2x)$$

$$x \in [0,7803981634, 0,7903981634]$$

$$f'(x) = -\sin(x) \ln(2x) + \frac{\cos(x)}{x}$$

$$\Delta f(\tilde{x}) = \left| -\sin(x) \ln(2x) + \frac{\cos(x)}{x} \right| \cdot 0,005$$

$$\Delta f\left(\frac{\pi}{4}\right) = 6,352158195 \times 10^{-3}$$

$$f\left(\frac{\pi}{4}\right) = 0,1961014515$$

$$f(x) \in [0,1897492933, 0,2024536097]$$