11

A $\tilde{x} = 1,5$ $\Delta\tilde{x} = 0,05$

$$f(x) = 1,25x^4 - x^3 + 1,5x^2 - 2x + 4,5$$

$x \in [1,45 , 1.55]$

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

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

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

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

$$f(\tilde{1,5}) = 7,828125$$

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

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

(B)

$\tilde{x} = \frac{\pi}{4}$ $\quad \Delta\tilde{x} = 0,005$

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

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

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

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

$\Delta f(\frac{\pi}{4}) = 2,904495615 \times 10^{-3}$

$f(\frac{\pi}{4}) = 0,3193171193$

$F(x) \in [0,3164121197 , 0,3222221188]$