

## ✓ Tugas konum

1. a. 2 angka berarti  $0, \boxed{84} \times 10^2$

b. 3 angka berarti  $\boxed{70,0}$

c. 4 angka berarti  $0,0 \boxed{4600}$

d. 3 angka berarti  $0,00 \boxed{460}$

e. 2 angka berarti  $\boxed{8,0} \times 10^3$

f. 1 angka berarti  $\boxed{8}000$

2. a. 8,76

d.  $5,44 \times 10^3$

b.  $3,68 \times 10^1$

e. 1,00

c.  $4,26 \times 10^3$

f.  $4,84 \times 10^1$

3. d.  $0,00432 + (25,1 \times 10^{-3}) + (10,322 \times 10^{-2})$   
 $0,00432 + 0,0251 + 0,1032$   
 $0,13262 = 0,133 = 1,33 \times 10^{-1}$

b.  $(4,68 \times 10^6) - (8,2 \times 10^2)$

$0,00000468 - 0,082$

$-0,082 = -8,2 \times 10^{-2}$

c.  $(7,7 \times 10^{-5}) - (5,409 \times 10^{-6}) + (7,0 \times 10^{-4})$

$(7,7 \times 10^{-5}) - (5,41 \times 10^{-6}) + (7,0 \times 10^{-4})$

$0,0015 = 1,5 \times 10^{-3}$

$$d. (8,38 \times 10^5) \times (6,9 \times 10^{-9})$$

$$57,822 = 58$$

$$e. |(8,38 \times 10^4) \times (6,90 \times 10^{-4})|$$

$$57,822 = 57,8$$

$$f. [(4,68 \times 10^{-6}) - (4,45 \times 10^{-5})] / (7,77 \times 10^3) + 9,6$$

$$[(4,68 \times 10^{-6}) - (4,45 \times 10^{-5})] / (7,7 \times 10^3) + 9,6$$

$$-0,0000398 / (7,77 \times 10^3) + 9,6$$

$$(-5,12 \times 10^{-9}) + 9,6$$

$$9,6$$

$$g. [(4,81 \times 10^{-3}) / [(6,9134 \times 10^3) + 32,26]] - (6,7845 \times 10^{-6})$$

$$[(4,81 \times 10^{-3}) / 32,27] - (6,784 \times 10^{-6})$$

$$(1,50 \times 10^{-4}) - (6,784 \times 10^{-6})$$

$$1,43 \times 10^{-4}$$

$$h. [58,6 \times (12 \times 10^{-6}) - (208 \times 10^{-6}) \times 1801] / (468,94 \times 10^{-6})$$

$$[(7,0 \times 10^{-4}) - (3,75 \times 10^{-1})] / (469 \times 10^{-6})$$

$$(-3,7 \times 10^{-1}) / (469 \times 10^{-6})$$

$$-7,9 \times 10^2$$

4.  $f(1) = e^{-1}$

$$f(x) = e^{-x}$$

$$f(2) = e^{-2} = 0,14$$

Orde ke-0 ( $n=0$ ) :  $f(x_{i+1}) = f(x_i)$

$$f(1) = e^{-1}$$

$$E_a = e^{-2} - e^{-1} = \frac{1}{e^2} - \frac{1}{e} \quad E_r = \frac{-0,23}{0,14}$$

$$= \frac{1-e}{e^2} \quad E_r = -1,64$$

$$= -0,23 \quad E_r = -164\%$$

orde ke-1 ( $n=1$ ) :

$$f(x_i) + f'(x_i)(x_{i+1} - x_i)$$

$$E_a = e^{-2} - 0 \quad E_r = \frac{0,14}{0,14}$$

$$f(1) = e^{-1}$$

$$= \frac{1}{e^2}$$

$$f'(1) = -e^{-1}$$

$$= 0,14$$

$$E_r = 1$$

$$f(1) + f'(1)(2-1)$$

$$E_r = 100\%$$

$$e^{-1} + (-e^{-1})$$

0

orde ke-2 ( $n=2$ ) :

$$f(1) + f'(1)(2-1) + [f''(1)/2!](2-1)^2 = \frac{1}{2e} \quad E_r = \frac{-0,05}{0,14} \times 100\%$$

$$E_a = e^{-2} - \frac{1}{2e}$$

$$E_r = 36\%$$

$$E_a = -0,05$$

$$E_r = -35,71\%$$

orde ke-3 ( $n=3$ ) :

$$f(1) + f'(1)(2-1) + [f''(1)/2!](2-1)^2 + [f'''(1)/3!](2-1)^3 = \frac{1}{3e}$$

$$E_a = \frac{1}{e^2} - \frac{1}{3e}$$

$$E_r = \frac{0,013}{0,14} \times 100\%$$

$$E_a = 0,013$$

$$E_r = 9,29\%$$

orde ke-4 ( $n=4$ ):

$$f(1) + f'(1)(2-1) + [f''(1)/2!](2-1)^2 + [f'''(1)/3!](2-1)^3 + [f^{(4)}(1)/4!](2-1)^4$$

$$\frac{1}{e^2} = \frac{3}{8e}$$

$$E_a = \frac{1}{e^2} - \frac{3}{8e}$$

$$E_a = -0,0026$$

$$E_r = \frac{-0,0026}{0,114} \times 100\% \\ = -1,86\%$$

5.  $f(x) = 25x^3 - 6x^2 + 7x - 88$

$$f'(x) = 75x^2 - 12x + 7$$

$$f''(x) = 150x - 12$$

$$f'''(x) = 150$$

$$f(2) = 102$$

$$f(3) = 554$$

orde ke-0 ( $n=0$ )

$$f(2) = 102$$

$$E_a = 554 - 102$$

$$E_a = 452$$

$$E_r = \frac{452}{554} \times 100\% = 81,59\%$$

orde ke-1 ( $n=1$ )

$$f(2) + f'(2)(3-2) = 385$$

$$E_a = 554 - 385$$

$$E_a = 169$$

$$E_r = \frac{169}{554} \times 100\%$$

$$E_r = 30,50\%$$

orde ke-2 ( $n=2$ )

$$f(2) + f'(2)(3-2) + [f''(2)/2!](3-2)^2 = 529$$

$$E_a = 554 - 529$$

$$E_a = 25$$

$$E_r = \frac{25}{554} \times 100\%$$

$$E_r = 4,51\%$$

orde ke-3 ( $n=3$ )

$$f(2) + f'(2)(3-2) + [f''(2)/2!](3-2)^2 + [f'''(2)/3!](3-2)^3 = 554$$

$$E_a = 554 - 554 \quad E_r = \frac{0}{554} \times 100\%$$

$$E_a = 0$$

$$E_r = 0\%$$

6.  ~~$f(x) = \ln x$~~

$$f(x) = \ln x$$

$$f(2) = 0,69$$

$$f'(x) = 1/x$$

$$f'(2) = 0,5$$

$$f''(x) = -x^{-2}$$

$$f''(2) = -0,25$$

$$f^3(x) = 2x^{-3}$$

$$f^3(2) = 2^{1/8} = 0,25$$

$$f^4(x) = -6x^{-4}$$

$$f^4(2) = -6^{1/16} = -0,375$$

$$f(4) = 1,39$$

orde ke-0 ( $n=0$ )

$$f(2) = 0,69$$

$$E_a = 1,39 - 0,69$$

$$E_a = 0,70$$

$$E_r = \frac{0,70}{1,39} \times 100\%$$

$$E_r = 50,36\%$$

orde ke-1 ( $n=1$ )

$$f(2) + f'(2)(4-2) = 1,69$$

$$E_a = 1,39 - 1,69$$

$$E_a = -0,30$$

$$E_r = \frac{-0,30}{1,39} \times 100\%$$

$$E_r = -21,58\%$$

orde ke-2 ( $n=2$ )

$$f(2) + f'(2)(4-2) + [f''(2)/2!](4-2)^2 = 1,19$$

$$E_a = 1,39 - 1,19$$

$$E_a = 0,20$$

$$E_r = \frac{0,20}{1,39} \times 100\%$$

$$E_r = 14,39\%$$



orde ke -3 ( $n=3$ )

$$f(2) + f'(2)(4-2) + [f''(2)/2!](4-2)^2 + [f^3(2)/3!](4-2)^3 = 1,53$$

$$E_a = 1,39 - 1,53 \quad E_r = \frac{-0,14}{1,39} \times 100\%$$

$$E_a = -0,14$$

$$E_r = -10,07\%$$

orde ke -4 ( $n=4$ )

$$f(2) + f'(2)(4-2) + [f''(2)/2!](4-2)^2 + [f^3(2)/3!](4-2)^3 + [f^4(2)/4!](4-2)^4 = 1,21$$

$$E_a = 1,39 - 1,21 \quad E_r = \frac{0,18}{1,39} \times 100\%$$

$$E_a = 0,18$$

$$E_r = 12,95\%$$