6.24b) $f(x) = x+1$ $[0,3]$ $n=6$

2)

$\dfrac{3}{6} = \dfrac{1}{2}$ $U_6 = \dfrac{1}{2} \cdot \sum\limits_{i=0}^{5} f\left(0 + \dfrac{1}{2} \cdot i + 1\right) = 13,5 \cdot \dfrac{1}{2} = \underline{6,75\,E^2}$

$O_6 = \dfrac{1}{2} \sum\limits_{i=1}^{6} f\left(0 + \dfrac{1}{2} \cdot i + 1\right) = 16,5 \cdot \dfrac{1}{2} = \underline{8,25\,E^2}$

Unterschied: $O_6 - U_6 = \overset{1,5}{} E^2$

1) $n = 4$

$\Delta x = \dfrac{3-0}{4} = \underline{\underline{\dfrac{3}{4}}}$ $U_4 = \dfrac{3}{4} \cdot \left(\sum\limits_{i=0}^{3} f(x_i + 1) \right) = \underline{6,375\,E^2}$

$O_4 = \dfrac{3}{4} \cdot \left(\sum\limits_{i=1}^{4} f(x_i + 1) \right) = \underline{8,62\,E^2}$

Unterschied: $8,62\,E^2 - 6,375\,E^2 = $
$2,245\,E^2$ $\left(\left(0 + \dfrac{3}{4} \cdot i + 1\right)\right)$

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c) $f(x) = 3x$ $[2,5]$

1) $n = 4$

$\Delta x = \dfrac{5-2}{4} = \underline{\underline{\dfrac{3}{4}}}$ $O_4 = \sum\limits_{i=1}^{4} 3 \cdot \left(2 + \dfrac{3}{4} i\right) = 34,875\,E^2$

$U_4 = \sum\limits_{i=0}^{3} 3 \cdot \left(2 + \dfrac{3}{4} \cdot i\right) = 28,125\,E^2$

Unterschied:

$O_4 - U_4 = 34,875\,E^2 - 28,125\,E^2 = \underline{6,75\,E^2}$

2) $n = 6$

$\Delta x = \dfrac{b-a}{n} = \dfrac{3}{6} = \underline{\underline{\dfrac{1}{2}}}$ $U_6 = \dfrac{1}{2} \cdot \sum\limits_{n=0}^{5} 3 \cdot \left(2 + \dfrac{1}{2} \cdot n\right) = \underline{29,25\,E^2}$

$O_6 = \dfrac{1}{2} \cdot \sum\limits_{n=1}^{6} 3 \cdot \left(2 + \dfrac{1}{2} \cdot n\right) = \underline{33,75\,E^2}$

Unterschied: $O_6 - U_6 = \underline{4,50\,E^2}$