

# Computer Mathematics

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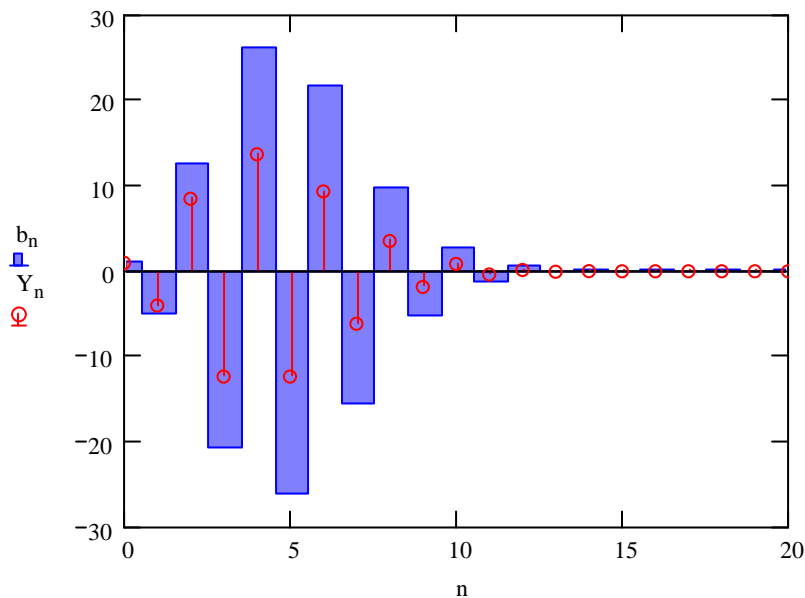
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## 1. Taylor.

### 1.1. Value of $n$ -th term in the Taylor Polinomial

$f(x) := e^{-x}$      $N := 20$      $n := 0..N$      $n1 := 1..N$      $x := 5$

$b_n := \frac{(-x)^n}{n!}$      $Y_0 := b_0$      $Y_{n1} := Y_{n1-1} + b_{n1}$



$$f(x) = 6.737946999 \times 10^{-3}$$

$$W_{n,0} := n$$

$$W_{n,1} := b_n$$

$$W_{n,2} := Y_n$$

$$W = \begin{pmatrix} 0 & 1 & 1 \\ 1 & -5 & -4 \\ 2 & 12.5 & 8.5 \\ 3 & -20.83333333 & -12.33333333 \\ 4 & 26.04166667 & 13.70833333 \\ 5 & -26.04166667 & -12.33333333 \\ 6 & 21.70138889 & 9.368055556 \\ 7 & -15.500992063 & -6.132936508 \\ 8 & 9.68812004 & 3.555183532 \\ 9 & -5.382288911 & -1.827105379 \\ 10 & 2.691144455 & 0.864039076 \\ 11 & -1.22324748 & -0.359208403 \\ 12 & 0.50968645 & 0.150478046 \\ 13 & -0.19603325 & -0.045555204 \\ 14 & 0.070011875 & 0.024456671 \\ 15 & -0.023337292 & 1.119379783 \times 10^{-3} \\ 16 & 7.292903644 \times 10^{-3} & 8.412283427 \times 10^{-3} \\ 17 & -2.14497166 \times 10^{-3} & 6.267311767 \times 10^{-3} \\ 18 & 5.958254611 \times 10^{-4} & 6.863137228 \times 10^{-3} \\ 19 & -1.56796174 \times 10^{-4} & 6.706341054 \times 10^{-3} \\ 20 & 3.91990435 \times 10^{-5} & 6.745540098 \times 10^{-3} \end{pmatrix}$$