

Álculo II Série de Taylor

$$a - f(x) = xe^x \text{ com } a=0$$

$$\sum_{n=0}^4 \frac{f^{(n)}(0)}{n!} (x-0) = \frac{0}{0!} x^0 + \frac{1}{1!} x^1 + \frac{2}{2!} x^2 \dots$$

$$\begin{aligned} n = 0 &\rightarrow 0 \rightarrow xe^x \\ n = 1 &\rightarrow 1 \rightarrow (x+1)e^x \\ n = 2 &\rightarrow 2 \rightarrow (x+2)e^x \\ n = 3 &\rightarrow 3 \rightarrow (x+3)e^x \\ n = 4 &\rightarrow 4 \rightarrow (x+4)e^x \end{aligned}$$

$$b - f(x) = \frac{1}{1+x} \text{ com } a=2$$

$$\sum_{n=0}^4 \frac{f^{(n)}(4)}{n!} (x-4) = \frac{0.4}{0!} (x-4) + \frac{1.4}{1!} (1-4) + \frac{2.4}{2!} ($$

$$\begin{aligned} n = 0 &\rightarrow 0 \\ n = 1 &\rightarrow 4 \\ n = 2 &\rightarrow 4 \\ n = 3 &\rightarrow 4 \\ n = 4 &\rightarrow 4 \end{aligned}$$

