Análise Matemática - Soluções da Ficha nº 1-B

1.

(a) $R = 1 \quad \text{e} \quad IC =]-1, 1[$;

(b) $R = 1 \quad \text{e} \quad IC =]-2, 0[$;

(c) $R = 2 \quad \text{e} \quad IC =]-4, 0[$;

(d) $R = +\infty \quad \text{e} \quad IC = \mathbb{R}$.

2.

(a) $\dfrac{1}{(2-x)^2} = \dfrac{1}{2}\dfrac{d}{dx}\left(\dfrac{1}{1-\frac{x}{2}}\right) = \displaystyle\sum_{n=0}^{+\infty} \dfrac{n+1}{2^{n+2}} x^n$;

(b) $\ln(2-x) = P\dfrac{-1}{2-x} = \ln 2 - \displaystyle\sum_{n=0}^{+\infty} \dfrac{x^{n+1}}{(n+1)2^{n+1}}$;

(c) $\dfrac{1-x}{1+x} = -1 + \dfrac{2}{x+1} = -1 + 2\displaystyle\sum_{n=0}^{+\infty} (-1)^n x^n$;

(d) $\dfrac{1}{x} = \dfrac{1}{1-(x-1)} = \displaystyle\sum_{n=0}^{+\infty} (-1)^n (x-1)^n$.