Calculo II
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Practica: Series

Determine la si las siguientes series divergen o convergen, si converge determine la suma.

1. $\sum_{n=1}^{\infty} \frac{1+2^n}{3^n}$
2. $\sum_{n=1}^{\infty} \frac{2 \cdot 3^n}{4^n}$
3. $\sum_{n=1}^{\infty} \frac{2}{n^2-1}$
4. $\sum_{k=3}^{\infty} \frac{4^{k+1}}{5^k}$
5. $\sum_{n=1}^{\infty} \frac{-1}{n^2+3n+2}$

Extras

1. Si se sabe que $\sum_{n=1}^{\infty} \frac{1}{n^2} = \frac{\pi^2}{6}$ calcule:

$$\sum_{n=1}^{\infty} \frac{1}{n^2(n+1)^2}$$

2. Determine la suma de la siguiente serie:

$$\sum_{n=2}^{\infty} \left(\frac{4}{n(n+1)} + \frac{(-1)^{n+1}}{5^n} \right)$$