

Ejercicios de convergencia de series:

1) Estudiar la convergencia de las series

$$a) \sum_{n \geq 1} \left(\frac{n}{7n+3} \right)^{2n+1}$$

$$b) \sum_{n \geq 1} \frac{2n^2}{2^n + 3}$$

$$c) \sum_{n \geq 1} \frac{(2n)!}{(n!)^2 (2n+1) 2^{2n}}$$

$$d) \sum_{n \geq 1} \frac{1}{n 2^n}$$

$$e) \sum_{n \geq 1} \frac{1}{\sqrt{n(n+1)}}$$

$$f) \sum_{n \geq 1} \frac{1}{2^n - n}$$

$$g) \sum_{n \geq 1} \left(\frac{n+1}{3n-1} \right)^n$$

$$h) \sum_{n \geq 1} \frac{1}{(2n-1) 2^n}$$

$$i) \sum_{n \geq 1} \left(\frac{n}{3n-2} \right)^{2n-1}$$

$$j) \sum_{n \geq 1} \frac{1}{n} \left(\frac{2}{5} \right)^n$$

$$k) \sum_{n \geq 1} \frac{n}{2^n}$$

$$l) \sum_{n \geq 1} \frac{(n+1)^n}{3^n n!}$$

$$m) \sum_{n \geq 1} \sqrt{\frac{(n+2)!}{5 \cdot 6 \cdot 7 \cdot \dots \cdot (n+5)}}$$

$$n) \sum_{n \geq 1} \frac{n^2}{(3n-1)^2}$$

$$o) \sum_{n \geq 1} \frac{\sqrt[3]{n}}{(n+1) \sqrt{n}}$$

$$p) \sum_{n \geq 1} \frac{3n-1}{(\sqrt{2})^n}$$

$$q) \sum_{n \geq 1} \frac{2 \cdot 5 \cdot 8 \cdot \dots \cdot (3n-1)}{1 \cdot 5 \cdot 9 \cdot \dots \cdot (4n-3)}$$

$$r) \sum_{n \geq 1} \frac{1}{n!}$$

$$s) \sum_{n \geq 1} \frac{2^{n+1}}{(n+1)^2 (n+2)^2}$$

$$t) \sum_{n \geq 1} \left(\frac{3^n}{3^{n+1}} \right)^n$$

$$u) \sum_{n \geq 1} \frac{1}{3^{\sqrt{n}}}$$

$$v) \sum_{n \geq 1} \frac{n^3}{e^n}$$

$$w) \sum_{n \geq 1} \left(\frac{2^{n+1}}{3^{n+1}} \right)^{n/2}$$

$$x) \sum_{n \geq 1} \frac{2^n n!}{n^n}$$

$$y) \sum_{n \geq 1} \frac{1 \cdot 3 \cdot 5 \cdot \dots \cdot (2n-1)}{2 \cdot 4 \cdot 6 \cdot \dots \cdot (2n+2)}$$

$$z) \sum_{n \geq 1} \left(\frac{n+1}{n^2} \right)^{n-1}$$