- EXERCISES

Determine if the following series converge or diverge

1) $\sum_{n=2}^{\infty} \frac{n-1}{\sqrt{n^6-1}}$

2) $\sum_{n=1}^{\infty} \frac{n!}{3^n}$

3) $\sum_{n=1}^{\infty} \frac{2-\cos n}{n^2}$

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

5) $\sum_{n=1}^{\infty} \log\left(1+\frac{1}{n^3}\right)$

6) For which real number $\alpha \geq 0$ the series $\sum_{n=1}^{\infty} \frac{\alpha^n}{n}$ converges?