l) Determine if the series $\sum_{n=0}^{\infty} \frac{n^2}{n^3-1}$ converges. Explain your reasoning.

2) Determine if the series $\sum_{n=0}^\infty \frac{n^2}{3^n}$ is convergent. Explain your reasoning.

3) Determine if the series $\sum_{n=0}^{\infty} \frac{(-1)^n(n+1)}{n^3+1}$ is convergent. Explain your reasoning.