1) 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.
