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1. Consider the convergent alternating series $\sum_{n=1}^{\infty} \frac{(-1)^{n-1}}{2n^2 - 1}$. Find the smallest value for n so that S_n has an error less than 0.03.

2. Determine which of the following series converge. If it converges, determine if it's conditional or absolute.

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

(b)
$$\sum_{n=1}^{\infty} \frac{(-1)^n \cdot n^2}{n^3 - 4}$$

3.
$$\sum_{n=1}^{\infty} \left(\frac{n+1}{n}\right)^n$$
. Explain why the Root Test cannot be used for this series.