Use the L'Hôpital's Rule and other methods of finding limits to calculate \( \lim_{x \to 0^+} \left( 1 + \frac{2x}{3} \right)^{\frac{3}{x}} \).

Determine the convergence/divergence of \( \int_0^\infty x e^{-2x} \, dx \). If convergent, provide the value of the integral.

Determine the convergence/divergence of \( \int_8^\infty \frac{2}{\sqrt[3]{x^4}} \, dx \). If convergent, provide the value of the integral.

Determine the convergence/divergence of \( 3 - 1 + \frac{1}{3} - \frac{1}{9} + \frac{1}{27} - \ldots \). If convergent, find the sum.

Express the repeating decimal 0.321515 as a geometric series and write its sum as the ratio of 2 integers.

Determine the convergence/divergence of \( \sum_{n=2}^{\infty} \frac{1}{n^2-1} \). If convergent, find the sum.

Determine the convergence/divergence of \( \sum_{n=0}^{\infty} \frac{1}{\sqrt{n^3+1}} \).

Determine the convergence/divergence of \( \sum_{n=1}^{\infty} \left( 1 + \frac{1}{2n} \right)^n \).

Determine the convergence/divergence of \( \sum_{n=2}^{\infty} \frac{1}{n(ln(n))^3} \).