

1. Evaluate $\int_e^{\infty} \frac{3dx}{x(\ln x)^2}$

a) Re-write the integral as a limit expression

b) Evaluate the integral or state that it diverges:

2. Evaluate $\int_{-1}^8 \frac{1}{\sqrt[3]{x}} dx$

a) Re-write the integral as a limit expression

b) Evaluate the integral or state that it diverges:

3. Find the arc length of the graph of the function $f(x) = x^2 - \frac{1}{8} \ln x$ on the interval $[1, 2]$

4. Use Partial Fractions to evaluate the integral: $\int \frac{x-13}{x^2+4x-5}$