1. [6 points] Use the integral test to determine whether the series
\[
\sum_{n=2}^{\infty} \frac{1}{n \ln(n^5)}
\]
converges or diverges. Explain your reasoning.

2. [6 points] Use one of the ratio or limit comparison tests to determine whether the series
\[
\sum_{n=1}^{\infty} \frac{1}{\sqrt[3]{3^n - 2}}
\]
converges. Explain your reasoning.