1. For each of the following series, determine whether it is convergent or divergent. You may use the techniques of geometric series, telescoping series, p-series, n-th term divergence test, integral test, comparison test, limit comparison test. Show your work and explain clearly.

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

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

(c) $\sum_{n=1}^{\infty} \frac{2^n}{3n}$.

(d) $\sum_{n=1}^{\infty} \left( \frac{2}{\sqrt{n}} - \frac{2}{\sqrt{n+1}} \right)$.

(e) $\sum_{n=1}^{\infty} \frac{2}{\sqrt{n}}$. 
(f) $\sum_{n=1}^{\infty} \frac{1}{n + \ln(n)}$. Hint: Regular or Limit compare to another series, use "largest term" in denominator.

(g) $\sum_{n=1}^{\infty} \frac{1}{n + 2^n}$. Hint: Regular compare to another series, use "largest term" in denominator.

(h) $\sum_{n=2}^{\infty} \frac{1}{n \ln(n)^3}$. Hint: Integral test.

(i) $\sum_{n=2}^{\infty} \frac{3n-1}{n^3 - 7}$. 