

**10.** [10 points] Determine whether the following series converge or diverge. Justify your answers.

**a.** [5 points]  $\sum_{n=2}^{\infty} \frac{(-1)^n \ln(n)}{n}$

**b.** [5 points]  $\sum_{n=1}^{\infty} \frac{n}{\sqrt{n^3 + 2}}$