Name:

Test each of the following series for convergence. Explain why each is convergent or divergent, and find the exact sum if possible.

   1.

$$\sum_{n=2}^{\infty} \frac{1}{n \ln n}$$

2.

$$\sum_{n=1}^{\infty} \frac{1 + n + n^2}{\sqrt{1 + n^2 + n^6}}$$

3.

$$\sum_{n=1}^{\infty} \frac{(-1)^{n-1}(2n+1)}{5n-3}$$

4.
$$\sum_{n=1}^{\infty} \frac{(-1)^{n-1}e^{1/n}}{n}$$

5.
$$\sum_{n=1}^{\infty} 3 \cdot \frac{2^{2n}}{5^n}$$

6.

$$\sum_{n=1}^{\infty} \frac{e^n - 10n}{4^n + n^2 + 8n}$$