Math 122 - #24
Alternating Series Test

Determine if the following series converge absolutely, converge conditionally, or diverge.

1. $\displaystyle\sum_{n=1}^{\infty} \frac{(-1)^n}{n}$

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

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

4. $\displaystyle\sum_{n=1}^{\infty} \frac{(-1)^n}{(n+1)^2}$

5. $\displaystyle\sum_{n=1}^{\infty} (-1)^n e^{-n}$

6. $\displaystyle\sum_{n=1}^{\infty} \frac{(-1)^n}{n\sqrt{n}}$

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

8. $\displaystyle\sum_{n=1}^{\infty} \frac{(-1)^n}{n2^n}$

9. $\displaystyle\sum_{n=2}^{\infty} \frac{(-1)^n}{n \ln n}$

Answers

1. Converges Conditionally

2. Diverges

3. Converges Conditionally

4. Converges Absolutely

5. Converges Absolutely

6. Converges Absolutely

7. Converges Conditionally

8. Converges Absolutely

9. Converges Conditionally