Alternating Series Test

Directions: Determine if the series is Absolutely convergent, conditionally convergent, or divergent.

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

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

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

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

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

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

7. $\sum_{n=1}^{\infty} \frac{(-1)^{n+1}(n^{2})}{(n^{3}+4)}$

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

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

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

11. $\sum_{n=1}^{\infty} \frac{\cos n\pi}{n^{3/4}}$

12. $\sum_{n=1}^{\infty} \frac{\sin\left(\frac{n\pi}{2}\right)}{n!}$

13. $\sum_{n=1}^{\infty} (-1)^{n} \sin\left(\frac{\pi}{n}\right)$

14. $\sum_{n=1}^{\infty} (-1)^{n} \cos\left(\frac{\pi}{n}\right)$

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

16. $\sum_{n=1}^{\infty} \left(\frac{-n}{5}\right)^{n}$