HW Quiz A  Determine whether the series converges or diverges. Justify your answer

Name____________________

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

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

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

4. $\sum_{n=1}^{\infty} \frac{5^k}{3 + 4^k}$
5. \( \sum_{n=1}^{\infty} \frac{3^n n^2}{n!} \)

6. \( \sum_{n=1}^{\infty} \left( \frac{2n}{n+1} \right)^n \)

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

8. \( \sum_{n=1}^{\infty} \frac{(-1)^n \sqrt{n}}{n^3} \)