

Provide a clear and organized presentation. Determine if each of the following series converge or diverge:

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

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