

6. Determine whether the series is convergent or divergent.

$$\sum_{n=1}^{\infty} \frac{n^6 + 4}{n^8 + n}$$

7. Use the Comparison Test to determine whether the series is convergent or divergent.

$$\sum_{n=1}^{\infty} \frac{5 + \sin 2n}{4^n}$$

8. Does the following series converge or diverge?

$$\sum_{n=0}^{\infty} \frac{(-1)^n}{4^n n!}$$

Hint: You may use alternating series theorem OR show the absolute convergence using ratio test.

9. Determine whether the series is convergent or divergent.

$$\sum_{n=1}^{\infty} \frac{6^n}{n! n}$$

10. Determine whether the series is convergent or divergent.

$$\sum_{n=1}^{\infty} \left(\frac{5n}{4n+1} \right)^n$$