

## Worksheet For 10.5 and 10.6

Determine whether these series converge or diverge, absolutely or conditionally.

1.  $\sum_1^{\infty} \frac{n^4}{4^n}$

2.  $\sum_2^{\infty} \sin^n\left(\frac{1}{\sqrt{n}}\right)$

3.  $\sum_1^{\infty} a_n$  with  $a_1 = 1$ ,  $a_{n+1} = \frac{1+\ln n}{n}a_n$

4.  $\sum_1^{\infty} (-1)^n \frac{1}{\ln n}$

5.  $\sum_1^{\infty} \frac{(-100)^n}{n!}$

6. The series  $\frac{1}{3} - \frac{1}{2} + \frac{1}{9} - \frac{1}{4} + \frac{1}{27} - \frac{1}{8} + \dots$  does not meet one of the conditions of the alternating series test. Which one?

Can we use another theorem of the same section to find the sum of this series?

