

Homework Set 9

DUE: APRIL 15, 2019 (AT THE BEGINNING OF CLASS)

To be handed in*Please write your solution to Problem 1 on a single sheet of paper!*

1. Decide whether each of the following series **converges or diverges**. If it is a convergent alternating series, decide whether it **converges conditionally or absolutely**. Justify your answers with an appropriate convergence test.

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

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

c)
$$\sum_{n=1}^{\infty} \frac{5n^2}{(2n)!}$$

d)
$$\sum_{n=1}^{\infty} \frac{(-1)^n n^{\frac{5}{2}}}{n^3 + 2}$$

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

2. Textbook (5th edition) Section 9.4, Exercises 3-6, 15-20
3. Textbook (5th edition) Section 9.5, Exercises 11-18
4. Textbook (5th edition) Section 9.6, Exercises 13-20, 35-42