

Professor Ken Ribet

Homework due Tuesday, October 3, 2017

The first part of the homework is to do these problems from the book:

- §4.1: 21, 22, 24
- §4.2: 13, 14, 16, 24
- §5.1: 1, 3, 5, 11, 15, 20, 24, 28, 34, 35, 36, 46, 49

The second part of the homework is to discuss the convergence of these infinite series:

1.
$$\sum_{n=1}^{\infty} \frac{1}{n \cdot 3^n}$$

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

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

4.
$$\sum_{n=0}^{\infty} \frac{\pi^n}{3^{2n+1}}$$

5.
$$\sum_{m=1}^{\infty} \ln \frac{m}{m+1}$$
 Hint: Done in class.

6.
$$\sum_{n=1}^{\infty} \left(\frac{1}{n} - \frac{1}{n+1} \right)$$
. Hint: Similar in spirit to the previous problem.

7.
$$\sum_{i=1}^{\infty} \left(\frac{5}{3^i} + \frac{2}{i} \right)$$