

MA 2733

Worksheet 6 – October 7, 2015

Name \_\_\_\_\_

1. (a) Explain why  $\sum_{n=0}^{\infty} \frac{(-1)^n}{n^2 + 1}$  absolutely converges.

(b) Give a partial sum for  $\sum_{n=0}^{\infty} \frac{(-1)^n}{n^2 + 1}$  which estimates the series to within 0.001.

2. Discuss convergence of  $\sum_{n=1}^{\infty} \frac{\cos(\pi n)}{n}$ .

3. Discuss convergence of  $\sum_{n=21}^{\infty} \frac{\cos(\frac{\pi}{4} \cdot n)}{n^2}$ .

4. Discuss convergence of  $\sum_{n=1}^{\infty} \frac{\cos n + \sin n}{n + 2^n}$ .

5. Explain why  $\sum_{n=100}^{\infty} \frac{\cos(\frac{\pi}{4} \cdot n)}{n}$  does not absolutely converge.