Instructor: Dr. R.A.G. Seely

Practice Test 3
(version A5)

Calculus II (Maths 201–NYB)

Justify your answers completely. Name any convergence test you use, and show its conditions are satisfied.

1. Does the following series converge or diverge? If it converges, what is the sum?

$$\sum_{n=1}^{\infty} \left(\operatorname{arcsec}(n + 1) - \operatorname{arcsec}(n)\right)$$

2. Does the series $\sum \sin(\mathrm{e}^{-n})$ converge or diverge?

3. Find the Maclaurin series for the function $f(x) = (x - 1)^{-1}$; express your answer in sigma notation; what is its interval of convergence?