King Fahd University of Petroleum and Minerals
Quiz 4 Math 102-161 Duration 25 minutes

Name: ID: Serial and Section numbers:

Question 1 Discuss the convergence-divergence of three of the following series:

$$a)\ \sum_{n=1}^{\infty} n\sin\left(\frac{1}{n}\right),\quad b)\ \sum_{n=1}^{\infty}\frac{1}{(\sqrt{2n+1}+2)(\sqrt{2n+1}-1)},\quad c)\ \sum_{n=1}^{\infty}\frac{\sin n+\tan^{-1}n}{n},\quad d)\ \sum_{n=2}^{\infty}\frac{1}{n\ln\sqrt{n}}$$

Question 2 Find the sum of the series:

$$\sum_{n=1}^{\infty} \left(\frac{3\cos(n\pi)}{2^n} + \frac{1}{4n^2-1} \right)$$