MTH101A: 2021 - 2022

Mock Exam: Question 4
Time: 7:30 - 8:00 pm

Q4. (a) Discuss the convergence/divergence of the series

$$\sum_{n=2}^{\infty} \frac{(\log n)(\sin n)}{(n + sin^2 n)^{5/4}}.$$

[7 marks]

(b) Using Riemann's criterion for the integrability, show that $f(x) = \frac{1}{1+x}$ is integrable on $[0, 1]$.

[8 marks]