

MATH 166
SUMMER 2012
QUIZ 20

1. (20 pt) Determine if the following series converge.

a) $\sum_{n=1}^{\infty} \frac{\sin(\frac{1}{n})}{n}$ b) $\sum_{n=1}^{\infty} \frac{(2n)!}{n!5^n}$ c) $\sum_{n=4}^{\infty} (a_n + \frac{3}{4})^n$, where $\sum_{n=4}^{\infty} a_n$ converges.

d) $\sum_{n=1}^{\infty} (-1)^n \frac{\cos(n^2)}{n^2 + 1}$