

McGill University

Quiz 3

MATH 141

Name and Student ID:

Examiner: Hadi Bigdely

Tuesday, May 29, 2012

8:45-9:15 AM

Time = 30 minutes

Write your exam version in the answer sheet. No calculators!

Show all your work: marks are not given for answers alone.

- (1) Apply one or more tests for convergence or divergence to determine whether the following series are absolutely convergent, conditionally convergent or divergent. All tests used must be named, and all statements must be carefully justified.

(a) (4 Marks) $\sum_{n=2}^{\infty} \left(1 + \frac{1}{2n}\right)^n$

(b) (4 Marks) $\sum_{n=2}^{\infty} \frac{\cos n\pi}{\ln n}$

(c) (4 Marks) $\sum_{n=2}^{\infty} (-1)^{n+1} \frac{(n+1)3^n}{2^{2n+1}}$

CONTINUATION OF PROBLEM 1:

- (2) (6 Marks) Evaluate the following series if it is convergent otherwise show it is divergent.

$$\sum_{n=1}^{\infty} \left(\frac{2(3)^{n+1}}{5^{2n}} + \frac{3}{2^n} \right)$$

Good Luck