Miniexam 4 (8 POINTS TOTAL)   MATH 141, SUMMER 2016
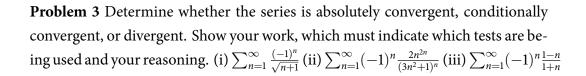
NAME:

Problem 1 Compute $\sum_{n=1}^{\infty} \frac{(-4)^{n-2}}{5^n}$.

(a) $-\dfrac{1}{36}$

(b) The series diverges.

(c) 5

(d) $\dfrac{4}{9}$

(e) $-\dfrac{16}{9}$

Problem 2 Which of the following statements about the series $\sum_{n=2}^{\infty} \frac{n}{n^3-5}$ is/are true?

(I) The series converges by the Limit Comparison Test with $\sum_{n=2}^{\infty} \frac{1}{n^2}$.

(II) The series converges by the Ratio Test.

(III) The series converges by the Comparison Test with $\sum_{n=2}^{\infty} \frac{1}{n^2}$.

(a) I and II

(b) II and III

(c) I, II, and III

(d) I and III

(e) I

Problem 3 Determine whether the series is absolutely convergent, conditionally convergent, or divergent. Show your work, which must indicate which tests are being used and your reasoning. (i) $\sum_{n=1}^{\infty} \frac{(-1)^n}{\sqrt{n+1}}$ (ii) $\sum_{n=1}^{\infty} (-1)^n \frac{2n^{2n}}{(3n^2+1)^n}$ (iii) $\sum_{n=1}^{\infty} (-1)^n \frac{1-n}{1+n}$

Feedback:

1. Any comments (on lectures, homework, quizzes, course, me, etc.)?