

Fri Nov 3 16:01:37 MST 2006

/m175.fa06/handouts175/qB03/qB03\_175

These are alleged answers. For each error herein, you get extra-credit points for being the first to report it by e-mail.

1 See lower red box on page 703

2 A recurring theme:  $\lim_{n \rightarrow \infty} a_n$  and  $\sum_{n=1}^{\infty} a_n$  are two different things:

$$\sum_{n=1}^{\infty} a_n = \lim_{K \rightarrow \infty} \sum_{n=1}^K a_n$$

The integral test is not the most appropriate thing for these problems. We cannot apply it to the first problem because  $a^x$  doesn't really work if  $a < 0$  for continuous variable  $x$ .

(a) Geometric series with  $r = -3/4$ . Since  $|r| < 1$ , this converges with sum  $4/7$ .

(b) This series diverges because  $\lim_{n \rightarrow \infty} \frac{3n + 5}{2n + 7} \neq 0$ .

(c) Geometric series with  $r = 3/4$ . Since  $|r| < 1$ , this converges with sum  $4$ .