

# Math 2315 - Calculus II

Homework #11

Assigned - 2010.02.22

Due - 2010.03.01

Name: \_\_\_\_\_

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Textbook problems:

Section 9.1 - 1-4 all, 12, 15, 17, 20, 22, 24, 27, 28, 29, 32, 34, 37, 38, 29, 40, 41

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Fun Problems:

1. If  $a_n = \sqrt{n+3} - \sqrt{n}$ , compute  $\lim_{n \rightarrow \infty} a_n$ .

2. If  $b_n = n^2 (\sqrt[3]{n^3+1} - n)$ , compute  $\lim_{n \rightarrow \infty} b_n$ .

3. Let  $c_n = \frac{\sqrt[n]{n!}}{n}$ . Show that  $\ln(c_n) = \frac{\ln(n!) - n \ln(n)}{n}$ .