Calculus I   *Spring 2003*
MA113:10-12   *Russell Brown*
Week 13

- Homework I, §4.1, #53 and §4.2 # 25 and the additional problem below.

  Additional problem. Use the method of example 5, page 260 to evaluate the sum:

  $$\sum_{k=1}^{n} k.$$

  Hint: First find the sum $\sum_{k=1}^{n}(2k - 1)$. Begin with $(k)^2 - (k-1)^2 = 2k - 1$.

- I have decided to skip the section on induction. You will find out about this in your computer science classes. If you are planning on taking a major in computer science, you might want to read this section.

- The third hour exam will be in CB 114 on Tuesday, 15 April 2003 from 7:30pm to 9:30pm. A review sheet was handed out on Wednesday, 9 April 2003.

- The errors of the week. 1. Not explaining why the critical number is an absolute maximum or minimum. 2. Not answering the question. (In homework H, both questions asked for the dimensions (length and width) of the largest possible rectangle.) 3. Not drawing a picture. 4. Not giving the units for the answer. 5. Using a test for a local maximum when you searching for an absolute maximum.

- Some puzzles: What comes next?

  - 1, 4, 9, 16, 25, 36, 49, ...
  - 1, 3, 9, 27, 81, 243, 729, ...
  - 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, ...
  - 1, 1, 2, 6, 24, 120, 720, ...

  More answers than you can imagine are at "The on-line encyclopedia of integer sequences", http://www.research.att.com/~/ njas/sequences/index.htm.

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