

Math 123, Section 4 Fall 2001

Assignment #2: Due October 9

1 Mathematics in This Shell

The expression $\sum_{i=1}^{\infty} a_i$ is in-line mathematics, while the numbered equation

$$\sum_{i=1}^{\infty} a_i \tag{1}$$

is displayed and automatically numbered as equation ??.

Let H be a Hilbert space, C be a closed bounded convex subset of H , T a nonexpansive self map of C . Suppose that as $n \rightarrow \infty$, $a_{n,k} \rightarrow 0$ for each k , and $\gamma_n = \sum_{k=0}^{\infty} (a_{n,k+1} - a_{n,k})^+ \rightarrow 0$. Then for each x in C , $A_n x = \sum_{k=0}^{\infty} a_{n,k} T^k x$ converges weakly to a fixed point of T .

Two sets of L^AT_EX parameters govern mathematical displays. The spacing above and below a display depends on whether the lines above or below are short or long, as shown in the following examples.

A short line above:

$$x^2 + y^2 = z^2$$

and a short line below.

A long line above may depend on your margins

$$\sin^2 \theta + \cos^2 \theta = 1$$

as will a long line below. This line is long enough to illustrate the spacing for mathematical displays, regardless of the margins.

2 Features of This Shell

This is some introductory text.

3 Section Headings

Use the Section tag for major sections, and the Subsection tag for subsections.

3.1 Subsection

This is some harmless text under a subsection.

3.1.1 Subsubsection

This is some harmless text under a subsubsection.

Subsubsubsection This is some harmless text under a subsubsubsection.

Subsubsubsubsection This is some harmless text under a subsubsubsubsection.

4 Tags

You can apply the logical markup tag *Emphasized*.

You can apply the visual markup tags **Bold**, *Italics*, Roman, Sans Serif, *Slanted*, SMALL CAPS, and Typewriter.

You can apply the special, mathematics only, tags **fraktur**, **BLACKBOARD BOLD**, and *CALLIGRAPHIC*. Note that blackboard bold and calligraphic are correct only when applied to uppercase letters A through Z.

You can apply the size tags `tiny`, `scriptsize`, `footnotesize`, `small`, `normalsize`, `large`, `Large`, `LARGE`, `huge` and `Huge`.

This is a Body Math paragraph. Each time you press the Enter key, Scientific WorkPlace switches to mathematics mode. This is convenient for carrying out “scratchpad” computations.

Following is a group of paragraphs marked as Body Quote. This environment is appropriate for a short quotation or a sequence of short quotations.

The only thing we have to fear is fear itself. *Franklin D. Roosevelt*, Mar. 4, 1933

Ask not what your country can do for you; ask what you can do for your country. *John F. Kennedy*, Jan. 20, 1961

There is nothing wrong with America that cannot be cured by what is right with America. *William J. “Bill” Clinton*, Jan. 21, 1993

4.1 List Environments

You can create numbered, bulleted, and description lists using the tag popup at the bottom left of the screen.

1. List item 1

2. List item 2

(a) A list item under a list item.

The typeset style for this level is different than the screen style. The screen shows a lower case alphabetic character followed by a period while the typeset style uses a lower case alphabetic character surrounded by parentheses.

(b) Just another list item under a list item.

i. Third level list item under a list item.

A. Fourth and final level of list items allowed.

• Bullet item 1

• Bullet item 2

– Second level bullet item.

* Third level bullet item.

· Fourth (and final) level bullet item.

Description List Each description list item has a term followed by the description of that term. Double click the term box to enter the term, or to change it.

Bunyip Mythical beast of Australian Aboriginal legends.