CSS 455 Winter 2012 C. Jackels
Activity No. 1 (Ans Key) January 5, 2012
Names (must be present):

No Answers needed – all items checked off by every student.

Checklist Assignment. (To be done with your partner; just check off if you have done this or know how to do it.

_____Start a Matlab session on the local Windows system.

_____Open the Matlab help window. This is an excellent source of information and explains in some detail the algorithms being used in some cases.

_____Open and explore the web-based help from the link on the course home page. Printed manuals can be found there as well.

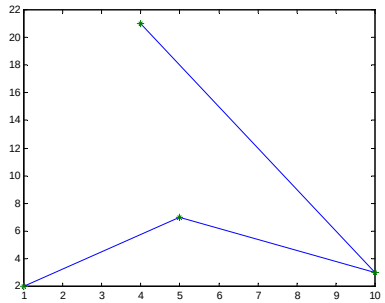
_____Vector algebra review using Matlab. These exercises are to remind you of a few basic vector algebra rules as well as to make sure you are familiar with using Matlab for vector manipulations.

- Know the difference between a column vector and row vector and that they are the transpose of each other.
- Generate a row vector **arow** and a column vector **bcol**, both of the same length. Use the function *rand* to fill them with random numbers between 1 and 10.
- Use the transposition operator (trailing single quote) to calculate **acol** and **brow**, which are their tranposes..
- Calculate the dot (inner) product of **arow** and **bcol.**
- Calculate the pointwise product of these two vectors. (*they must have the same shape for these operations)*
- Calculate the pointwise quotient of these two vectors. (*they must have the same shape for these operations)*
- Calculate the 1-norm, 2-norm, and infinity-norm of one of these vectors. *Which one is the common Euclidean norm?*
- Calculate the *outer product* of the two vectors: **acol*brow**

_____Make sure you can use the m-file editor in Matlab. Within Matlab, Click on "File", then on "New", and then on "m-file". This should spawn an editor window. In the editor window enter the following script:

```
clear
clc
a = [1 5 10 4]
b = [2 7 3 21]
c = a + b
plot (a,b,a,b,'*')
```

_____Save this file as *fname* (it will be saved as *fname.m*), move back to the main Matlab command window and enter the command *fname* . The script should execute and produce a plot in Figure 1.



M-files are the format for saving work between sessions, saving main program scripts, creating library functions, transfering to another computer system, or communicating with your partner.

_____Check to see that you can print from the command, the m-file editor, and the figure 1 windows.