## EOSC 211: review sheet, week 13:

**% Question 1.1**

Dimensions and element-wise versus matrix algebra

Given a = [1 2; 3 -1; 0 1], b = [3: -2: -2]’, c = ones(3)

What are the dimensions of

1. a
2. b
3. c
4. b’\*a
5. a.ˆ2
6. a\*a’
7. aˆ2

**% Question 1.2**

Math 1

A=[1 5 3 0 1]; B=[0 5 6 0 1];

C=A./B + 4

% What is the value of C?

**% Question 1.3**

Write a function transp that will take as input a 2-D array A, and return the array B where B(i,j) = A(j,i). Do not use a built-in MATLAB function.

Add a check to the function code that will exit the function with an error message if A is not a 2-D array.

**% Question 1.4:** Code writing 1

% The Fibonacci sequence goes 0,1,1,2,3,5,... where each number is the

% sum of the previous 2 numbers. How many terms in the sequence are

% less than 5000? (write code, pseudo-code, or a flowchart)

**% Question 1.5**

Precedence

Given a = 3. What is

1. x= [2ˆa+a\*2+1, aˆsum([2:-1:0,-4])]
2. x= aˆ3-2ˆa

**Question 1.6, 1.7 file handling – see worksheet from last Thurs**

**Question 1.8**

% debug 1 – This code is supposed to sum all the values in y, until the

% sum reaches 12. There are two problems here, and one possible

% additional problem for general choices of y – what are they?

x=1:10;

y=2\*x;

sum=0;

while (sum1 + y(i) < 12)

sum1=sum1+y(i);

i=i+1;

end

fprintf('Sum = %3.1f, i=%3d\n',sum1,i-1);

% debug 2 – Want compute the vector d=(a\*b)/c using element-wise arithmetic so that length(d)=length(a). Fix the problems.

a=1:3:30;

b=sin(a);

c=tan(a);

d=a\*b/c;

plot(a,d);