

**MTH 237-60**

*Extra credit 1. Row reduction in Octave (1 pt)*

Extra credit may be submitted in groups. This assignment is worth one extra credit point and is due at the end of the semester (Tuesday, June 28). Send me an e-mail or come to office hours if you need help.

On the following page is code that I wrote to re-invent Octave's RREF function. On your own paper, row-reduce the matrix

$$\left[ \begin{array}{ccc|c} 1 & 2 & 1 & 7 \\ 1 & 2 & 2 & 11 \\ 2 & 4 & 3 & 18 \end{array} \right]$$

(W. 6.b. on p. 22), following the code and explaining which lines are operating on each of your steps. Particularly, lines 5-6, 7-11, and 12-19 each play an important role in the row reduction process. Tell me what role each plays and point it out as you go through row-reducing the given matrix.

*Extra credit 1, continued*

```
1 function B = rref2 (A)
2   m = rows(A); n = columns(A);
3   for i = 1:m
4     for j = 1:n
5       if A(i,j) != 0
6         A(i,:) = A(i,+)/A(i,j);
7         for l = 1:m
8           if l != i
9             A(l,:) = A(l,:) - A(l,j)*A(i,);
10          endif
11        endfor
12        for l = (i+1):m
13          for s = (l+1):m
14            if A(l,:) == A(s,:)
15              A(s,:) = zeros(1,n);
16              A([s m],:) = A([m s],:);
17            endif
18          endfor
19        endfor
20        break
21      endif
22    endfor
23  endfor
24  B = A
25 endfunction
```