TI-82 Program for finding the reduced row-echelon form of a matrix

Prgm: ECHELON	**Where to find them**
dim[A]→L_1	**dim**: MATRIX MATH menu
$L_1(1)$→M	
$L_1(2)$→N	
[A] →[C]	
1→I	
1→J	**Lbl**: Prgm menu
Lbl 2	**If**: Prgm menu; **round**: MATH NUM menu; "≠": TEST menu
If round([C](I,J),6)≠0	**Goto**: Prgm menu
Goto 8	
0→H	
Lbl 6	
If round([C](I+H,J),6) ≠0	**IS**>: PRGM menu
Goto 5	
IS>(H,M-I)	
Goto 6	
Goto 7	**Row Swap**: MATRIX menu
Lbl 5	
Row Swap([C],I,I+H)→[C]	***Row**: Matrix menu
Lbl 8	
***Row**([C](I,J)$^{-1}$,[C],I)→[C]	
0→H	
Lbl 1	"=": TEST menu
H+1→H	
If H=I	">": TEST menu
H+1→H	
If H>M	
Goto 9	***Row+**: MATRIX menu
-[C](H,J)→K	
***Row**+(K,[C],I,H)→[C]	
Goto 1	
Lbl 9	
I+1→I	
If I>M	
Goto 3	
Lbl 7	
IS>(J,N)	
Goto 2	
Lbl 3	
Disp [C]	**Disp**: PRGM menu

To use this program, you must first use the MATRIX EDIT menu to specify the size of the matrix you want to reduce as well as the all entries of the matrix. You must enter this as matrix [A]. When you run the program, the reduced matrix will be stored as matrix [C] and will be displayed at the conclusion of the program. If the entries (which will be rounded to 6 decimal places) cause the reduced matrix to be too large for the display, simply press **2nd [C]** (over the 3 button) in order to redisplay [C] and allow the use of the arrow keys to view all the entries. If you prefer that the matrix entries be displayed as fractions, you can use the ⇒Frac function of the TI-82 calculator.

The TI-83Plus, TI-84, TI-85, TI-86, and TI-89 calculators have this function built in (see the manual under rref) and allows you to display the entries in either decimal form or as fractions. You can also work with matrices with dimension larger than 6×6.