RREF on HP50G

MODE: To change modes, hit the MODE key and then use the ↑ and ↓ keys to move to the line you want. Then use the F2 key (CHOOS) to get a drop-down menu and select the option you want. Hitting ENTER or F6 (OK) will then change the calculator to that mode.

Operating Mode is assumed to be Algebraic.

Hit CAS to get another page of options. On my calculator, I have the Numeric, Approx, and Complex boxes <u>unchecked</u>. I believe that what this means is that if you enter exact integers, the result will be displayed in exact form (fractions, simplified radicals, etc.). If you enter decimals, you'll get a decimal approximation as your answer. If you get an exact answer and want to override it to display the decimal approximation, just hit the orange arrow key and the ENTER, which is the key combination for →NUM (shown in orange above the ENTER key).

To enter the [] brackets, the key combo is White Arrow, then × (square brackets are shown in white above the times key). To enter a comma, it's Orange Arrow, then SPC.

To enter the augmented matrix $\begin{bmatrix} 3 & 4 & 5 \\ 5 & 6 & 7 \end{bmatrix}$, type in

$$[[3,4,5][5,6,7]]$$

and the HP will display the matrix you've entered. Not so useful.

We want the matrix in reduced row-echelon format. To get the RREF() command (note: this is different from the rref() command in lower-case), the key combo is White Arrow, then 5 (it says MATRICES in white above the 5), 5 again for LINEAR SYSTEMS, Enter to choose that option, then 4 Enter for RREF (not rref, mind!).

You want to put in:

$$RREF([[3,4,5][5,6,7]])$$

and then the HP should give you

$$\begin{bmatrix} 1 & 0 & -1 \\ 0 & 1 & 2 \end{bmatrix}$$

That's it!