Math 260 Quiz # 3

Name: Solution Serial # _____

Find the reduced row echelon form of the matrix $\begin{bmatrix} 3 & -6 & 10 & 6 & 5 & 27 \\ 2 & -4 & 8 & 3 & 10 & 7 \\ 1 & -2 & 3 & 2 & 1 & 10 \end{bmatrix}$

$R_1 \leftrightarrow R_3$ $\begin{bmatrix} 1 & -2 & 3 & 2 & 1 & 10 \\ 2 & -4 & 8 & 3 & 10 & 7 \\ 3 & -6 & 10 & 6 & 5 & 27 \end{bmatrix}$

$-2R_1+R_3$, $-3R_1+R_3$ $\begin{bmatrix} 1 & -2 & 3 & 2 & 1 & 10 \\ 0 & 0 & 2 & -1 & 8 & -13 \\ 0 & 0 & 1 & 0 & 2 & -3 \end{bmatrix}$

$R_2 \leftrightarrow R_3$ $\begin{bmatrix} 1 & -2 & 3 & 2 & 1 & 10 \\ 0 & 0 & 1 & 0 & 2 & -3 \\ 0 & 0 & 2 & -1 & 8 & -13 \end{bmatrix}$

$-2R_2+R_3$ $\begin{bmatrix} 1 & -2 & 3 & 2 & 1 & 10 \\ 0 & 0 & 1 & 0 & 2 & -3 \\ 0 & 0 & 0 & -1 & 4 & -7 \end{bmatrix}$

$-R_3$ $\begin{bmatrix} 1 & -2 & 3 & 2 & 1 & 10 \\ 0 & 0 & 1 & 0 & 2 & -3 \\ 0 & 0 & 0 & 1 & -4 & 7 \end{bmatrix}$

$-3R_2+R_1$ $\begin{bmatrix} 1 & -2 & 0 & 2 & -5 & 19 \\ 0 & 0 & 1 & 0 & 2 & -3 \\ 0 & 0 & 0 & 1 & -4 & 7 \end{bmatrix}$

$-2R_3+R_1$ $\begin{bmatrix} 1 & -2 & 0 & 0 & 3 & 5 \\ 0 & 0 & 1 & 0 & 2 & -3 \\ 0 & 0 & 0 & 1 & -4 & 7 \end{bmatrix}$

which is the reduced row echelon form of the given matrix.