In questions 1-4, state whether the matrices are in echelon form, reduced row echelon form (RREF) or neither form.

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

Multiple Choice:

(a) *Echelon form* ✓

(b) *RREF*

(c) *neither*

Question 2 $\begin{bmatrix} 1 & 2 & 4 \\ 0 & 0 & 0 \\ 0 & 1 & 3 \end{bmatrix}$

Multiple Choice:

(a) *Echelon form*

(b) *RREF*

(c) *neither* ✓

Question 3 $\begin{bmatrix} 1 & 0 & 0 & 4 & 9 & 0 \\ 0 & 0 & 1 & 3 & 2 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \end{bmatrix}$

Multiple Choice:

(a) *Echelon form* ✓

(b) *RREF*

(c) *neither*

Question 4 $\begin{bmatrix} 1 & 0 & 3 & 0 & 8 & 0 \\ 0 & 1 & 1 & 0 & 3 & -4 \\ 0 & 0 & 0 & 1 & 0 & -5 \end{bmatrix}$

Multiple Choice:

(a) *Echelon form*

(b) *RREF* ✓

(c) *neither*

Question 5 *Given the augmented matrix below that corresponds to a linear system in variables x_1, x_2, x_3, and x_4, what is the correct parametric description of the solution set?*

$$\left[\begin{array}{cccc|c} 0 & 1 & 4 & 0 & 2 \\ 0 & 0 & 0 & 1 & 7 \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{array}\right]$$

Multiple Choice:

(a) $\begin{cases} x_1 & = 2 - x_2 - 4x_3 \\ x_2 & = 7 \\ x_3 & free \\ x_4 & free \end{cases}$

(b) $\begin{cases} x_1 & = 2 - x_2 - 4x_3 \\ x_2 & free \\ x_3 & = 7 \\ x_4 & free \end{cases}$

(c) $\begin{cases} x_1 & = 2 - 4x_3 \\ x_2 & free \\ x_3 & free \\ x_4 & = 7 \end{cases}$ ✓

(d) *no solution*
