

For each of the matrices below, identify if it is

- in row echelon form
- in reduced row echelon form
- in neither of the above forms

and justify why *yes* or *no*.

1.

$$A = \begin{bmatrix} 1 & 0 & 5 & 0 & 0 & 7 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 1 & 3 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 \end{bmatrix}$$

2.

$$A = \begin{bmatrix} 1 & 0 & 5 & 0 & 0 & 7 \\ 0 & 0 & 0 & 1 & 5 & 1 \\ 0 & 1 & 3 & 0 & -1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

3.

$$A = \begin{bmatrix} 1 & 0 & 5 & 0 & 0 & 7 \\ 0 & 2 & 3 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 & 5 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

4.

$$A = \begin{bmatrix} 1 & 2 & 5 & -8 & 0 & 7 \\ 0 & 1 & 3 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 & 5 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

5.

$$A = \begin{bmatrix} 1 & 0 & 5 & 2 & 0 & 7 \\ 0 & 1 & 3 & 0 & -1 & -5 \\ 0 & 0 & 0 & 1 & 5 & 4 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

6.

$$A = \begin{bmatrix} 1 & 0 & 5 & 0 & 0 & 0 \\ 0 & 1 & 3 & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 & 5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \end{bmatrix}$$

7.

$$A = \begin{bmatrix} 1 & -1 & 0 & 6 \\ 0 & 1 & 3 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

8.

$$A = \begin{bmatrix} 1 & 2 & 0 & -3 & 4 \\ 0 & 1 & -2 & 0 & 5 \\ 0 & 0 & 0 & 1 & 2 \end{bmatrix}$$

9.

$$A = \begin{bmatrix} 1 & 0 & 0 & 0 & 4 \\ 0 & 1 & -2 & 0 & 5 \\ 0 & 0 & 0 & 1 & 2 \end{bmatrix}$$

10.

$$A = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$