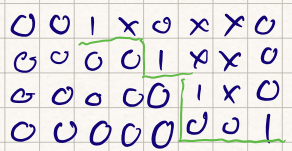
RREF:



$A = \begin{bmatrix} 1 & 1 \\ 2 & -1 \end{bmatrix}$ $B = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$.

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

$= \begin{bmatrix} -4 & 2 \\ 3 & 7 \end{bmatrix}$.

Find all values of k such that the linear system with augmented matrix

$$\left[\begin{array}{ccccc|c} 1 & 2 & 0 & 0 & 5 & 1 \\ 0 & 0 & 1 & 0 & 6 & -1 \\ 0 & 0 & 0 & 1 & 0 & 3 \\ 0 & 0 & 0 & 0 & k^2-4 & 0 \end{array}\right]$$

has a 2-parameter family of solutions.

- A. $k = \pm 2$ only
- B. all $k \neq 2$
- C. all $k \neq -2$
- ✖ D. all $k \neq \pm 2$
- E. No value of k gives a 2-parameter family of solutions.

答案:A

Let $\left[\begin{array}{ccccc|c} 1 & 0 & 1 & 2 & 5 & 0 \\ 0 & 1 & 0 & 1 & 3 & 0 \\ 0 & 0 & 0 & 0 & c^2-9 & c+3 \end{array}\right]$ be the augmented matrix for a system of 3 linear equations in 5 unknowns. For what value of c does the linear system have a 2-parameter family of solutions?

- ✖ A. $c = 3$
- B. $c = -3$
- C. $c = \pm 3$
- D. $c \neq \pm 3$
- E. no value of c

答案:D

Let $\left[\begin{array}{ccccc|c} 1 & 0 & 1 & 2 & 5 & 0 \\ 0 & 1 & 0 & 1 & 3 & 0 \\ 0 & 0 & 0 & 0 & c^2-9 & c+3 \end{array}\right]$ be the augmented matrix for a system of 3 linear equations in 5 unknowns. For what value of c does the linear system have a 2-parameter family of solutions?

- ✖ A. $c = 3$
- B. $c = -3$
- C. $c = \pm 3$
- D. $c \neq \pm 3$
- E. no value of c

答案:D