data
fecha

01.

$$A = \begin{bmatrix} x & 1 \\ 5 & 3 \end{bmatrix} \cdot B = \begin{bmatrix} 3 & -1 \\ y & 2 \end{bmatrix} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

$$\begin{cases} 3x + y = 1 \\ 15 + 3y = 0 \end{cases}$$

$$\begin{cases} -x + 2 = 0 \\ -5 + 6 = 1 \end{cases}$$

$15 + 3y = 0$
$3y = -15$
$y = \frac{-15}{3}$
$y = -5.$

$-x + 2 = 0$
$2 = x$

$x + y$
$2 - 5$
$\hookrightarrow -3$ //

(C)

data
fecha

02.

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

a. $K=0$ e $K=3$

$$\begin{bmatrix} 1 & 0 & 1 & 1 & 0 \\ 0 & 1 & 3 & 0 & 1 \\ 1 & 0 & 3 & 1 & 3 \end{bmatrix}$$

$3+0+0-(1+0+0)$

$D = 3-1$

$D = 2$. X

↳ admite inversão

b. $K=1$ e $K=-1$

$$\begin{bmatrix} 1 & 0 & 1 & 1 & 0 \\ 1 & 1 & 3 & 1 & 1 \\ 1 & 1 & 3 & 1 & 1 \end{bmatrix}$$

$3+0+1-(1+3+0)$

$4-4$

0

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

$3+0+1-(1-3+0)$

$4+2$

$D=6$ → admite inversão

data
fecha

c. $k=1$ e $k=2$

↳ não admite inversão

$$\left[\begin{array}{ccc|cc} 1 & 0 & 1 & 1 & 0 \\ 2 & 1 & 3 & 2 & 1 \\ 1 & 2 & 3 & 1 & 2 \end{array}\right]$$

$3+0+4-(1+6+0)$

$7-7$

$D=0$

↳ não admite inversão

(C)

data
fecha

03.

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

$D_A = 3 \cdot 4 - (5 \cdot 2)$

$D_A = 12 - 10$

$D_A = 2$

$B = A^{-1}$

$$\begin{bmatrix} 4 & -5 \\ -2 & 3 \end{bmatrix} \div 2 = \begin{bmatrix} 2 & -\frac{5}{2} \\ -1 & \frac{3}{2} \end{bmatrix}$$

(C)

data
fecha

04. $\begin{bmatrix} x & 1 & 2 \\ 3 & 1 & 2 \\ 10 & 1 & x \end{bmatrix}$

a. $x \neq 3$ e $x \neq 2$

(a)

$\begin{bmatrix} 3 & 1 & 2 \\ 3 & 1 & 2 \\ 10 & 1 & 3 \end{bmatrix} \begin{matrix} 3 & 1 \\ 3 & 1 \\ 10 & 1 \end{matrix}$

$9 + 20 + 6 - (20 + 6 + 9)$

$35 - 35$

0

$\begin{bmatrix} 2 & 1 & 2 \\ 3 & 1 & 2 \\ 10 & 1 & 2 \end{bmatrix} \begin{matrix} 2 & 1 \\ 3 & 1 \\ 10 & 1 \end{matrix}$

$4 + 20 + 6 - (20 + 4 + 6)$

$30 - 30$

0

data
fecha

06.

$$\left(\begin{array}{ccc|ccc} -1 & -1 & 2 & 1 & 0 & 0 \\ 2 & 1 & -2 & 0 & 1 & 0 \\ 1 & 1 & -1 & 0 & 0 & 1 \end{array}\right) \begin{array}{l} \cdot(-1) \\ \cdot -2 \\ \\ \end{array}$$

$$\left(\begin{array}{ccc} 1 & 1 & 0 \\ 0 & -1 & 2 \\ 1 & 0 & 1 \end{array}\right)$$

$$\left(\begin{array}{ccc} -1 & -1 & 2 \\ 2 & 1 & -2 \\ 1 & 1 & -1 \end{array}\right) + \left(\begin{array}{ccc} 1 & 1 & 0 \\ 0 & -1 & 2 \\ 1 & 0 & 1 \end{array}\right)$$

$$\left(\begin{array}{ccc} -1+1 & -1+1 & 2+0 \\ 2+0 & 1+(-1) & -2+2 \\ 1-1 & 1+0 & -1+1 \end{array}\right)$$

$$\left(\begin{array}{ccc} 0 & 0 & 2 \\ 2 & 0 & 0 \\ 2 & 1 & 0 \end{array}\right)$$

B

data
fecha

06.

$(X \cdot A)^t = B$

$((X \cdot A)^t)^t = B^t = X \cdot A = B^t$

$XAA^{-1} = B^t A^{-1} \quad -XI = B^t A^{-1}$

$X = B^t A^{-1}$

B

data
fecha . .

D S T Q Q S S
D L M M J V S

07.

$$A \cdot \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 4x + 5y \\ 5x + 6y \end{bmatrix}$$

$$A = \begin{bmatrix} 4 & 5 \\ 5 & 6 \end{bmatrix}$$

$$\text{INVERSO} = \begin{bmatrix} -6 & 5 \\ 5 & -4 \end{bmatrix}$$

(D)

data
fecha

08.

$$A = \begin{pmatrix} 2 & K \\ -2 & 1 \end{pmatrix}$$

b.

$K = -2$

$$K = \frac{-8 \pm 0}{2 \cdot -4} \qquad \therefore K = \frac{-8 \pm 0}{-8}$$

$$K_1 = \frac{-8}{-8} \qquad K_2 = \frac{-8}{-8}$$

$$K_1 = -1 \qquad K_2 = -1$$

-1

B

data
fecha

09.

a.

$(a+b)\cdot(a+b)$

$(a+b)\cdot(a+b)$

$a^2 - ab + ba - b^2$

b.

$(a+b)^2 = (a+b)\cdot(a+b)$

$= a^2 + ab + ba + b^2$

$a^2 + 2ab + b^2$

$ba + ab$

c.

$$\frac{Det\,a}{Det\,b}$$

$Det(-a) = (-1)^2 \cdot Det\,a = Det\,A \neq 0$

$$\frac{Det\,a}{Det\,b} = 1$$

d.

$Det(ab) = 1$

$Det(b) \cdot Det(a) = 1$

$$Det(b) = \frac{1}{Det(a)}$$