

$$3. \quad A = \begin{bmatrix} 3 & 5 \\ 2 & 4 \end{bmatrix} \quad \bar{A} = \begin{bmatrix} 4 & -2 \\ 5 & 3 \end{bmatrix} \rightarrow \bar{A} = \begin{bmatrix} 4 & -5 \\ -2 & 3 \end{bmatrix}$$

$$B = \begin{bmatrix} 2 & 5/2 \\ -1 & 3/2 \end{bmatrix} \quad (C)$$

$$4. \quad \begin{array}{c|c|c} x & 1 & 2 \\ \hline A = \begin{bmatrix} 3 & 1 & 2 \\ 10 & 1 & x \end{bmatrix} & \begin{bmatrix} x & 1 \\ 3 & 1 \end{bmatrix} & \begin{array}{l} 20 + 2x + 3x \\ \neq 0 \\ 0 \end{array} \end{array}$$

$$x^2 + 26 - (20 + 5x)$$

$$x^2 + 26 - 20 - 5x \neq 0$$

$$x + 20 + 6 \quad x^2 - 5x + 6 \neq 0$$

$$a: 1 \quad b: -5 \quad c: 6$$

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4 \cdot 1 \cdot 6}}{2 \cdot 1}$$

$$x = \frac{5 \pm \sqrt{25 - 24}}{2}$$

$$x = \frac{5 \pm \sqrt{1}}{2}$$

$$V = \{x \neq 3; x \neq 2\}$$

$$x' = \frac{5 + 1}{2} = 3 \quad x'' = \frac{5 - 1}{2} = 2$$

(A)

5. $2+2+2$

-1	-1	2	-1	-1	4-2
----	----	---	----	----	-----

$A = \begin{vmatrix} 2 & 1 & -2 \\ 2 & 1 & -2 \\ 1 & 1 & -1 \end{vmatrix} = 7 - 6 = 1$

$1+2+4$

$\bar{A} =$	1	0	1		1	1	0
	1	-1	0	$\rightarrow \bar{A}' =$	0	-1	2
	0	2	1		1	0	1

$$A + A^{-1} =$$

0	0	2
2	0	0
2	1	0

R: (B)

6. $(xA)^t = B \rightarrow [xA]^t$

$$B^t \rightarrow X.A = B^t \rightarrow X.A.A^{-1}$$

$$B^T \cdot A^{-1} = x = B^T \cdot A^{-1} \quad \textcircled{B}$$

7.

x	4	5	x	$4y + 5y$	$Am = 4x = 4$	$A^2 = 6 - 5$
$A =$	5	6	y	$5y + 6y$	x	$-5 \quad 4$

$$A_{12} = 5y = 5$$

y

$$A21 = 5x = 5$$

χ

$$A_{22} = 6y = 6$$

Y

A?	6	5
	5	4

$$A^{-1} = \begin{bmatrix} 6 & -5 \\ -5 & 4 \end{bmatrix}$$

$$\text{Det } A = \begin{vmatrix} 4 & 5 \\ 5 & 6 \end{vmatrix} = 24 - 25 = -1$$

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

(D)

8. $A = \begin{pmatrix} 2 & k \\ -2 & 1 \end{pmatrix} \rightarrow \text{Det } A = \begin{vmatrix} 2 & k \\ -2 & 1 \end{vmatrix} = 2 + 2k$

$$\begin{pmatrix} 2 & k \\ -2 & 1 \end{pmatrix} \rightarrow A^t = \begin{pmatrix} 1+2 & \\ -k & 2 \end{pmatrix} \rightarrow A^{-1} \begin{pmatrix} 1 & -1k \\ 2 & 2 \end{pmatrix} : 2+2k$$

$$A^{-1} = \begin{vmatrix} 1/2+2k & -k/2+2k \\ 1/1+k & 0/1+1+k \end{vmatrix} = \begin{vmatrix} 1 & \\ 2(1+k) & \end{vmatrix}$$

$$\frac{1}{2(1+k)} \rightarrow (2+2k) \cdot 2(1+k) = 1$$

$$(2+2k) \cdot (2+2k) = 1$$

$$4 + 4k + 4k + 4k^2 = 1$$

$$4k^2 + 8k + 3 = 0$$

$$a: 4 \quad b: 8 \quad c: 3$$

$$x = \frac{8 \pm 4}{8}$$

$$x' + x'' = -0,5 + (-1,5)$$

$$x' + x'' = -2$$

$$x = \frac{-8 \pm \sqrt{8^2 - 4 \cdot 4 \cdot 3}}{2 \cdot 4}$$

$$x' = \frac{-8 + 4}{8} = -0,5$$

(B)

$$x = \frac{-8 \pm \sqrt{64 - 48}}{8}$$

$$x'' = \frac{8 - 4}{8} = -1,5$$

$$x = \frac{-8 \pm \sqrt{16}}{8}$$

9.

a) $(A+B)(A-B)$
 $A^2 - AB + BA - B^2$

b) $(A+B)^2 = A^2 + 2AB + B^2$
 $A^2 + 2AB + B^2 = A^2 + 2AB + B^2$
 $A = B$

c) $\det A \rightarrow$ é negativo, pois é dividido por ele mesmo.
 $\det(-A)$

d) $B = A^{-1} = \frac{\det A}{\det A}$

||
😊