Tarefa básica -

1)

a) $\begin{bmatrix} 2 & 3 \\ 1 & 5 \end{bmatrix}$ =3 =10 Det A = 10 - 3 = 7

Det A = 7

b) $\begin{bmatrix} -2 & -4 \\ 3 & 6 \end{bmatrix}$ = -12 = -12 Det B = -12 - (-12)

Det B = 0

c) $\begin{bmatrix} 3 & -1 & 1 \\ 2 & 1 & -1 \\ 1 & 4 & -2 \end{bmatrix}$ 3 -1 / 2 1 / 1 4

1 -12 . 4 = -7

-6 1 -3 8 = 3

Det C = 3 - (-7)

Det C = 10

d) $\begin{bmatrix} 3 & 2 & -1 \\ 2 & 3 & 1 \\ 1 & 1 & 4 \end{bmatrix}$ 3 2 / 2 3 / 1 1

-3 3 16 = 16

36 2 -2 = 36

Det d = 36 - 16

Det d = 20

2) $\begin{bmatrix} -3 & 0 & 0 \\ 0 & -3 & 0 \\ 0 & 0 & -3 \end{bmatrix}$ -3 0 / 0 -3 / 0 0

-27

Det A = -27 (A)

3) $\begin{bmatrix} x & 1 & x \\ 3 & x & 4 \\ 1 & 3 & 3 \end{bmatrix}$ x 1 / 3 x / 1 3

$x.x.3 + 1.4.1 + x.3.3 - (1x.x + 3.4x + 3.3.1) =$

$3x^2 + 4 + 9x - (x^2 + 12x + 9) = -3$

$3x^2 + 4 + 9x - x^2 - 12x - 9 = -3$

$2x^2 - 5 - 3x + 3 = 0$

$2x^2 + x - 4x - 2 = 0$

$(2x + 1).(x - 2) = 0$

$2x + 1 = 0$

$x = \frac{-1}{2}$

$x - 2 = 0$

$x = 2$

(E)

4)

$$\begin{bmatrix} x-1 & -1 & 0 \\ 0 & x+1 & -1 \\ 2 & -1 & x+1 \end{bmatrix} \begin{matrix} x-1 & -1 \\ 0 & x+1 \\ 2 & -1 \end{matrix}$$

$2x + 2x - 2x - 2x$

$x-1 \cdot (x+1) \cdot (x+1) + (-1) \cdot (-1) \cdot 2 + 0 \cdot 0 \cdot -1 - (2 \cdot x + 1 \cdot 0 + (-1) \cdot (-1) \cdot x - 1 + x + 2x - 1) = 2$

$x-1\,(x^2+2x)+1 \cdot 2+0=2$

$x-1\,(x^2+2x)+1 \cdot 2=2$

$x^3+2x^2-x^2-2x+2=2$

$x^3+x^2-2x+2=2$

$x[x(x+2)-(x+2)]=0$

$x(x+2)(x-1)=0$

$x=0$ | $x+2=0$, $x=-2$ | $x-1=0$, $x=1$

$x=-1$ (C)

5)

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

$$A \cdot B=\begin{bmatrix} 4 & -1 & -6 \\ 2 & 1 & 0 \\ 0 & 3 & 6 \end{bmatrix} \rightarrow \det[A \cdot B]=0$$

(C)

6)

(A)