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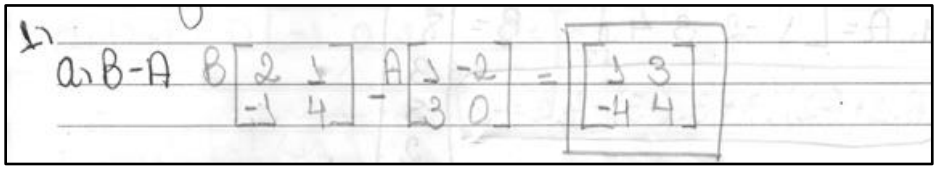
Operações com matrizes

1) Dadas as matrizes abaixo, indique as operações que podem ser efetuadas.

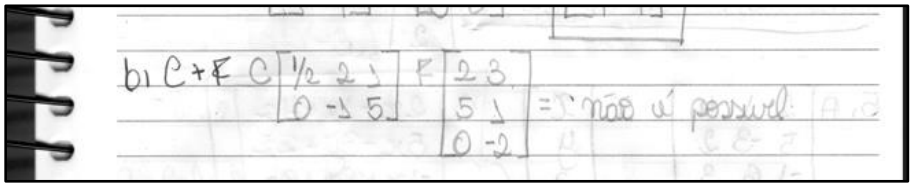
$A = \begin{bmatrix} 1 & -2 \\ 3 & 0 \end{bmatrix}$ $B = \begin{bmatrix} 2 & 1 \\ -1 & 4 \end{bmatrix}$ $C = \begin{bmatrix} \frac{1}{2} & 2 & 1 \\ 0 & -1 & 5 \end{bmatrix}$

$D = [-1 \quad 0 \quad 2]$ $E = \begin{bmatrix} 3 \\ 1 \\ 2 \end{bmatrix}$ $F = \begin{bmatrix} 2 & 3 \\ 5 & 1 \\ 0 & -2 \end{bmatrix}$

a) B – A

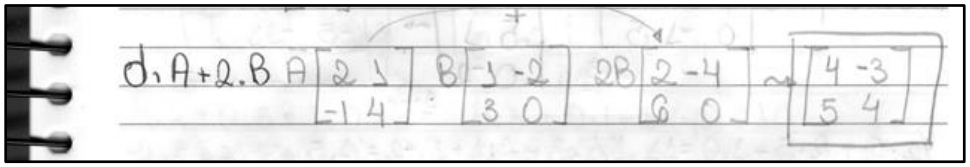


b) C + F



c) E + D

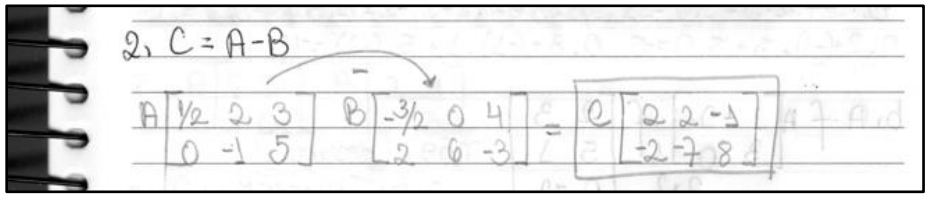
d) A + 2B



2) Dadas as matrizes

$$A = \begin{bmatrix} \frac{1}{2} & 2 & 3 \\ 0 & -1 & 5 \end{bmatrix} \qquad B = \begin{bmatrix} -\frac{3}{2} & 0 & 4 \\ 2 & 6 & -3 \end{bmatrix}$$

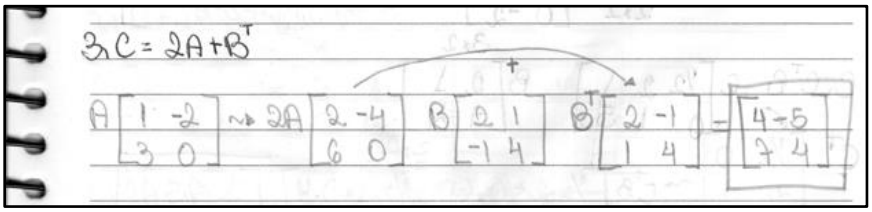
Calcule C = A – B.



3) Dadas as matrizes

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

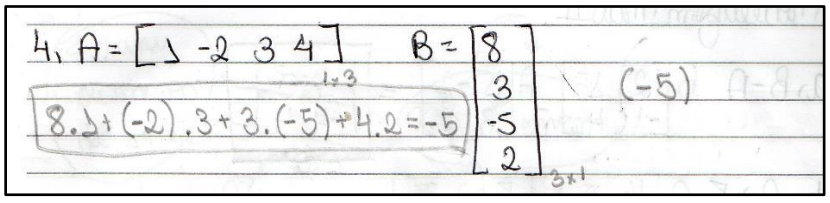
Calcule C = 2A + B^T.



4) Dadas as matrizes

$$A = [1 \quad -2 \quad 3 \quad 4] \qquad B = \begin{bmatrix} 8 \\ 3 \\ -5 \\ 2 \end{bmatrix}$$

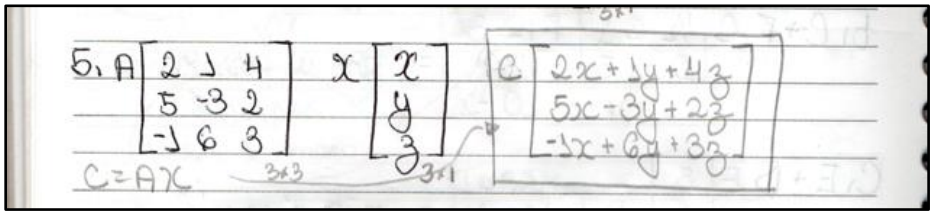
Calcule C = AB



5) Dadas as matrizes

$$A = \begin{bmatrix} 2 & 1 & 4 \\ 5 & -3 & 2 \\ -1 & 6 & 3 \end{bmatrix} \qquad X = \begin{bmatrix} x \\ y \\ z \end{bmatrix}$$

Calcule C = AX

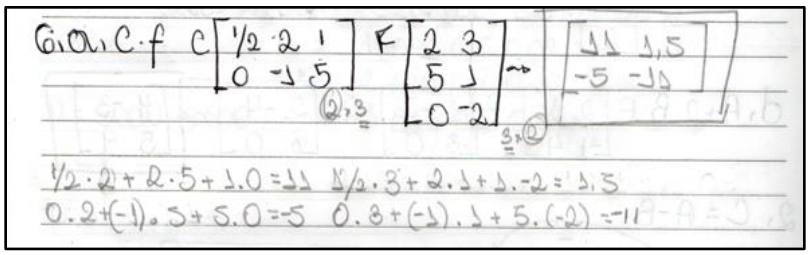


6) Dadas as matrizes abaixo, indique as operações que não podem ser efetuadas.

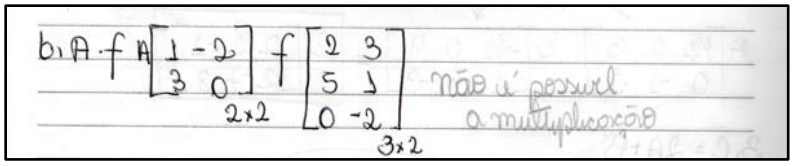
$$A = \begin{bmatrix} 1 & -2 \\ 3 & 0 \end{bmatrix} \qquad B = \begin{bmatrix} 2 & 1 \\ -1 & 4 \end{bmatrix} \qquad C = \begin{bmatrix} 1 & 2 & 1 \\ 2 & -1 & 5 \\ 0 & & \end{bmatrix}$$

$$D = [-1 \quad 0 \quad 2] \qquad E = \begin{bmatrix} 3 \\ 1 \\ 2 \end{bmatrix} \qquad F = \begin{bmatrix} 2 & 3 \\ 5 & 1 \\ 0 & -2 \end{bmatrix}$$

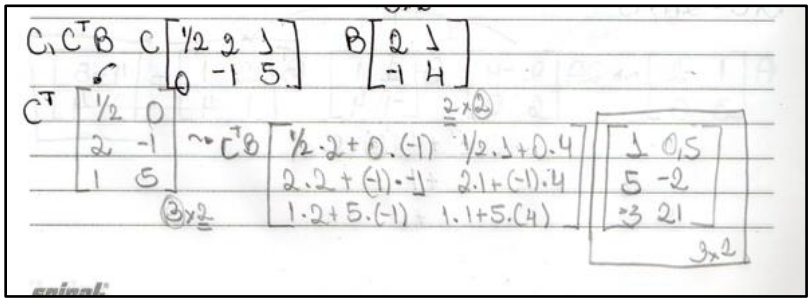
a) CF



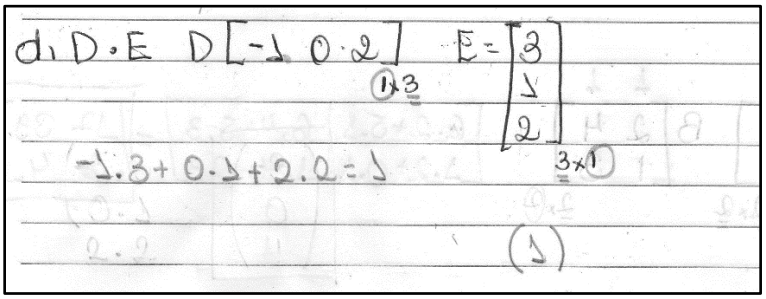
b) AF



c) C^TB



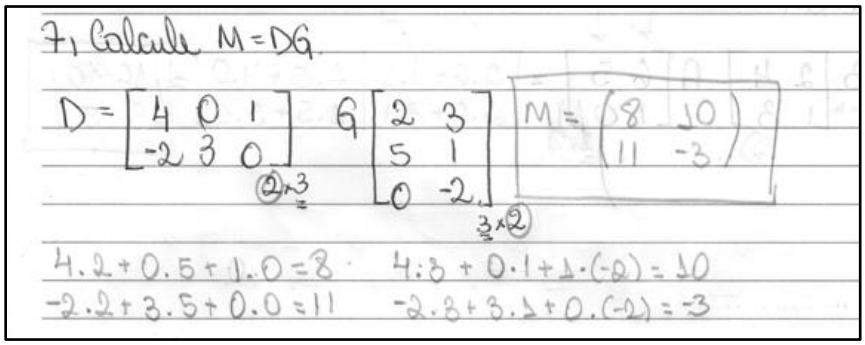
d) DE



7) Dadas as matrizes

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

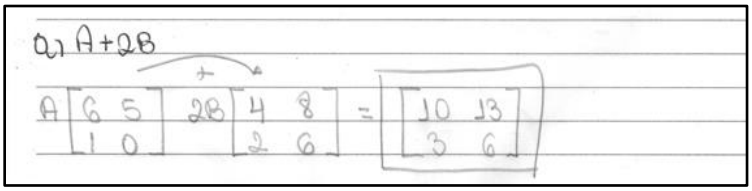
Calcule M = DG



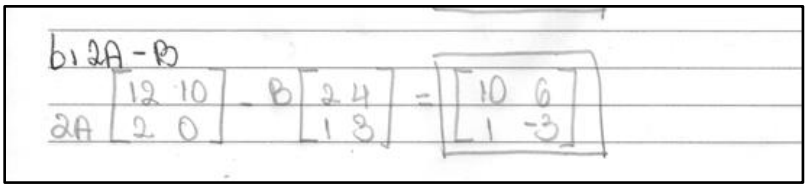
8) Dadas as matrizes

$$A = \begin{bmatrix} 6 & 5 \\ 1 & 0 \end{bmatrix} \qquad B = \begin{bmatrix} 2 & 4 \\ 1 & 3 \end{bmatrix}$$

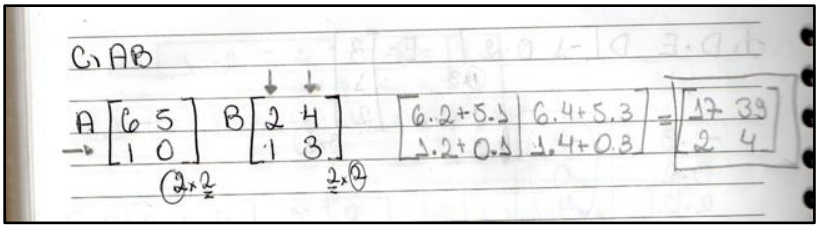
a) A + 2B



b) 2A – B



c) AB



d) BA