

M04 ATIVIDADE AVALIATIVA

Álgebra Linear

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Departamento de Matemática

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Questões

Distribuição

Questão 01

Questão 02

Questão 03

Questão 01 | Valor 3.5

Dadas as bases $X = \{\mathbf{x}_1, \mathbf{x}_2, \mathbf{x}_3\}$ e $Y = \{\mathbf{y}_1, \mathbf{y}_2, \mathbf{y}_3\}$ de \mathbb{R}^3 , determine as matrizes de transição $P_{X \rightarrow Y}$ e $P_{Y \rightarrow X}$ responsáveis pelas mudanças de bases entre os vetores de coordenadas de X e de Y . As bases estão definidas na TABELA I (por aluno).

Questão 02 | Valor 3.0

Dada a matriz A , determine as matrizes P e P^{-1} responsáveis pela transformação $D = P^{-1}AP$, onde D é a matriz diagonal similar à matriz A .

As matrizes estão definidas na TABELA II (por aluno).

Questão 03 | Valor 3.5

Determine todos os autovalores e respectivos autovetores da matriz B .

As matrizes estão definidas na TABELA III (por aluno).

Questões

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TABELA I | PARTE 02/03

GABRIEL STIEGEMEIER

$$\begin{aligned} \mathbf{x}_1 &= (-4, 5, 2) & \mathbf{x}_2 &= (-3, -1, -2) \\ \mathbf{y}_1 &= (2, 5, -1) & \mathbf{y}_2 &= (-5, -1, 4) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (0, 5, -5) \\ \mathbf{y}_3 &= (-2, -4, -3) \end{aligned}$$

GABRIELI MARTINS DE OLIVEIRA

$$\begin{aligned} \mathbf{x}_1 &= (2, -2, -5) & \mathbf{x}_2 &= (-3, 2, 5) \\ \mathbf{y}_1 &= (-2, 2, 2) & \mathbf{y}_2 &= (3, 3, 2) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (-1, -4, -5) \\ \mathbf{y}_3 &= (-5, 5, 3) \end{aligned}$$

GUILHERME BRIZZI

$$\begin{aligned} \mathbf{x}_1 &= (4, 1, 4) & \mathbf{x}_2 &= (-4, -4, -5) \\ \mathbf{y}_1 &= (3, -1, 4) & \mathbf{y}_2 &= (4, 1, 1) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (4, -1, -3) \\ \mathbf{y}_3 &= (2, -3, 5) \end{aligned}$$

GUILHERME FERREIRA DA SILVA

$$\begin{aligned} \mathbf{x}_1 &= (-3, 5, -1) & \mathbf{x}_2 &= (1, -1, -3) \\ \mathbf{y}_1 &= (-4, 3, 0) & \mathbf{y}_2 &= (4, -5, -3) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (2, -2, -5) \\ \mathbf{y}_3 &= (2, 3, -2) \end{aligned}$$

GUILHERME MENEGHETTI EINLOFT

$$\begin{aligned} \mathbf{x}_1 &= (-2, -4, 0) & \mathbf{x}_2 &= (3, 3, 5) \\ \mathbf{y}_1 &= (-1, 3, -2) & \mathbf{y}_2 &= (5, -4, -3) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (2, 5, 1) \\ \mathbf{y}_3 &= (-1, -4, -2) \end{aligned}$$

GUSTAVO DA SILVA REIS

$$\begin{aligned} \mathbf{x}_1 &= (4, 5, -1) & \mathbf{x}_2 &= (-2, 0, 3) \\ \mathbf{y}_1 &= (-3, -3, -4) & \mathbf{y}_2 &= (-5, 5, -2) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (3, 2, 1) \\ \mathbf{y}_3 &= (-3, 5, -4) \end{aligned}$$

GUSTAVO MONTAGNER DOS SANTOS

$$\begin{aligned} \mathbf{x}_1 &= (-1, 3, -3) & \mathbf{x}_2 &= (1, -4, 2) \\ \mathbf{y}_1 &= (3, 5, -5) & \mathbf{y}_2 &= (5, 3, 4) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (3, -5, 4) \\ \mathbf{y}_3 &= (-4, -1, 1) \end{aligned}$$

JAIME ANTONIO DANIEL FILHO

$$\begin{aligned} \mathbf{x}_1 &= (-4, -2, -4) & \mathbf{x}_2 &= (-5, -1, -4) \\ \mathbf{y}_1 &= (-5, -5, -1) & \mathbf{y}_2 &= (0, 2, 4) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (-2, -2, 4) \\ \mathbf{y}_3 &= (-2, 0, -3) \end{aligned}$$

JHUAN LUIS ALMEIDA ASSUMPCAO

$$\begin{aligned} \mathbf{x}_1 &= (-4, 4, 5) & \mathbf{x}_2 &= (-2, 5, -1) \\ \mathbf{y}_1 &= (-4, 1, -4) & \mathbf{y}_2 &= (2, -3, -5) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (-2, 0, -2) \\ \mathbf{y}_3 &= (2, 5, 2) \end{aligned}$$

JOAO CARLOS ZUCCHI

$$\begin{aligned} \mathbf{x}_1 &= (1, 0, 2) & \mathbf{x}_2 &= (2, -4, -3) \\ \mathbf{y}_1 &= (-1, 4, 2) & \mathbf{y}_2 &= (1, -3, 4) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (0, -2, -2) \\ \mathbf{y}_3 &= (4, -5, 2) \end{aligned}$$

JOAO PEDRO AZENHA RIGHI

$$\begin{aligned} \mathbf{x}_1 &= (5, -1, 4) & \mathbf{x}_2 &= (-3, 1, -5) \\ \mathbf{y}_1 &= (-2, 1, 2) & \mathbf{y}_2 &= (2, 1, 0) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (3, -1, 2) \\ \mathbf{y}_3 &= (3, -2, 3) \end{aligned}$$

JOAO PEDRO RODRIGUES FREIRE

$$\begin{aligned} \mathbf{x}_1 &= (4, -5, 2) & \mathbf{x}_2 &= (5, 1, 5) \\ \mathbf{y}_1 &= (4, 0, 0) & \mathbf{y}_2 &= (0, 3, -3) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (1, -4, -1) \\ \mathbf{y}_3 &= (5, 5, -4) \end{aligned}$$

JOAO VITOR DA SILVA

$$\begin{aligned} \mathbf{x}_1 &= (-3, 1, -3) & \mathbf{x}_2 &= (-1, 4, -5) \\ \mathbf{y}_1 &= (-5, 0, 0) & \mathbf{y}_2 &= (2, -4, 2) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (1, 4, 1) \\ \mathbf{y}_3 &= (1, -3, 2) \end{aligned}$$

KAUAN MARUIAMA

$$\begin{aligned} \mathbf{x}_1 &= (-1, -5, -5) & \mathbf{x}_2 &= (-1, 5, 0) \\ \mathbf{y}_1 &= (-1, 1, 0) & \mathbf{y}_2 &= (-4, 3, 4) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (2, -1, 2) \\ \mathbf{y}_3 &= (-5, 2, 2) \end{aligned}$$

LARISSA RODRIGUES SILVEIRA

$$\begin{aligned} \mathbf{x}_1 &= (3, 5, -4) & \mathbf{x}_2 &= (-3, 0, 5) \\ \mathbf{y}_1 &= (3, -1, -2) & \mathbf{y}_2 &= (-5, 1, 2) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (3, 3, 0) \\ \mathbf{y}_3 &= (-5, 1, -5) \end{aligned}$$

LEANDRO BRUM DA SILVA LACORTE

$$\begin{aligned} \mathbf{x}_1 &= (-2, -5, -3) & \mathbf{x}_2 &= (-3, -4, 5) \\ \mathbf{y}_1 &= (5, 2, 4) & \mathbf{y}_2 &= (0, 3, 5) \end{aligned}$$

$$\begin{aligned} \mathbf{x}_3 &= (-1, -2, -4) \\ \mathbf{y}_3 &= (-5, 5, 3) \end{aligned}$$

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TABELA I | PARTE 03/03

LEANDRO OLIVEIRA DO NASCIMENTO

$$\begin{array}{lll} \mathbf{x}_1 = (-2, 0, -4) & \mathbf{x}_2 = (1, 3, 2) & \mathbf{x}_3 = (-4, -3, -5) \\ \mathbf{y}_1 = (1, 5, -2) & \mathbf{y}_2 = (4, 0, -3) & \mathbf{y}_3 = (1, 1, 1) \end{array}$$

LUCAS GUEDES CORREIA

$$\begin{array}{lll} \mathbf{x}_1 = (-3, -2, 4) & \mathbf{x}_2 = (-2, -1, -5) & \mathbf{x}_3 = (-4, -5, 3) \\ \mathbf{y}_1 = (-2, 4, 3) & \mathbf{y}_2 = (1, 3, 1) & \mathbf{y}_3 = (1, -2, 1) \end{array}$$

LUCAS XAVIER PAIRE

$$\begin{array}{lll} \mathbf{x}_1 = (-2, -3, -5) & \mathbf{x}_2 = (5, -2, 1) & \mathbf{x}_3 = (2, -2, 5) \\ \mathbf{y}_1 = (-2, -3, 5) & \mathbf{y}_2 = (4, -1, 0) & \mathbf{y}_3 = (-2, 4, 5) \end{array}$$

LUIS FERNANDO DA CRUZ ANTUNES

$$\begin{array}{lll} \mathbf{x}_1 = (-2, 1, -3) & \mathbf{x}_2 = (-4, -1, -3) & \mathbf{x}_3 = (-4, 2, 0) \\ \mathbf{y}_1 = (-3, -5, 1) & \mathbf{y}_2 = (3, -5, -4) & \mathbf{y}_3 = (1, -2, 1) \end{array}$$

LUIS GUSTAVO WERLE TOZEVICH

$$\begin{array}{lll} \mathbf{x}_1 = (5, 3, -3) & \mathbf{x}_2 = (-5, 5, 4) & \mathbf{x}_3 = (3, 3, 0) \\ \mathbf{y}_1 = (1, -3, -1) & \mathbf{y}_2 = (4, 3, 5) & \mathbf{y}_3 = (-2, -4, -5) \end{array}$$

LUIS HENRIQUE CHESANI

$$\begin{array}{lll} \mathbf{x}_1 = (-4, 0, -5) & \mathbf{x}_2 = (-2, -5, 4) & \mathbf{x}_3 = (-2, 4, -4) \\ \mathbf{y}_1 = (4, 3, 4) & \mathbf{y}_2 = (2, 1, 2) & \mathbf{y}_3 = (0, 4, -3) \end{array}$$

LUIS HENRIQUE SILVEIRA POZZEBON

$$\begin{array}{lll} \mathbf{x}_1 = (-3, 5, -2) & \mathbf{x}_2 = (5, 1, -2) & \mathbf{x}_3 = (-5, -4, 2) \\ \mathbf{y}_1 = (-2, 2, 1) & \mathbf{y}_2 = (-1, 0, 4) & \mathbf{y}_3 = (-5, 4, -3) \end{array}$$

MATHIAS ECKERT RECKTENVALD

$$\begin{array}{lll} \mathbf{x}_1 = (2, 1, 1) & \mathbf{x}_2 = (0, -1, -3) & \mathbf{x}_3 = (-5, 0, -4) \\ \mathbf{y}_1 = (5, 0, -2) & \mathbf{y}_2 = (3, -1, -5) & \mathbf{y}_3 = (-4, 5, 4) \end{array}$$

MIGUEL BRONDANI

$$\begin{array}{lll} \mathbf{x}_1 = (4, -1, 2) & \mathbf{x}_2 = (-3, 3, 2) & \mathbf{x}_3 = (5, -1, 4) \\ \mathbf{y}_1 = (2, -4, 2) & \mathbf{y}_2 = (-5, -4, -1) & \mathbf{y}_3 = (-4, 2, -4) \end{array}$$

NILTON DA SILVA RIBEIRO FILHO

$$\begin{array}{lll} \mathbf{x}_1 = (1, 5, -1) & \mathbf{x}_2 = (3, -5, -3) & \mathbf{x}_3 = (-4, 2, 0) \\ \mathbf{y}_1 = (-3, -4, -4) & \mathbf{y}_2 = (4, -1, 5) & \mathbf{y}_3 = (-1, -3, 0) \end{array}$$

PEDRO DE ANDRADE SANTOS

$$\begin{array}{lll} \mathbf{x}_1 = (-1, -2, 2) & \mathbf{x}_2 = (-4, 4, 2) & \mathbf{x}_3 = (2, 1, -5) \\ \mathbf{y}_1 = (-3, -5, -2) & \mathbf{y}_2 = (1, -4, -5) & \mathbf{y}_3 = (-5, -4, -2) \end{array}$$

PEDRO HENRIQUE DA SILVA HINERASKY

$$\begin{array}{lll} \mathbf{x}_1 = (-5, 3, -3) & \mathbf{x}_2 = (4, -5, -1) & \mathbf{x}_3 = (-4, 1, 2) \\ \mathbf{y}_1 = (4, 2, 4) & \mathbf{y}_2 = (-2, -4, 1) & \mathbf{y}_3 = (-1, -3, 1) \end{array}$$

RAMON GODOY IZIDORO

$$\begin{array}{lll} \mathbf{x}_1 = (-1, 0, 1) & \mathbf{x}_2 = (-4, -4, 1) & \mathbf{x}_3 = (2, 3, -5) \\ \mathbf{y}_1 = (4, -5, -5) & \mathbf{y}_2 = (2, 4, 4) & \mathbf{y}_3 = (0, -4, 4) \end{array}$$

RIAN BILHAO PEREIRA

$$\begin{array}{lll} \mathbf{x}_1 = (5, -2, 5) & \mathbf{x}_2 = (3, 4, 1) & \mathbf{x}_3 = (0, -3, 3) \\ \mathbf{y}_1 = (-5, 4, -4) & \mathbf{y}_2 = (0, 3, 3) & \mathbf{y}_3 = (5, 4, 3) \end{array}$$

ROBERTO JOSE MAHL

$$\begin{array}{lll} \mathbf{x}_1 = (-5, 1, 4) & \mathbf{x}_2 = (-3, 3, 0) & \mathbf{x}_3 = (0, -2, -5) \\ \mathbf{y}_1 = (2, 2, -3) & \mathbf{y}_2 = (2, -5, 0) & \mathbf{y}_3 = (0, -3, 3) \end{array}$$

THIERRY WEISSHEIMER MONTEIRO

$$\begin{array}{lll} \mathbf{x}_1 = (5, 3, -5) & \mathbf{x}_2 = (5, -1, 2) & \mathbf{x}_3 = (-1, 2, -1) \\ \mathbf{y}_1 = (-2, 1, 1) & \mathbf{y}_2 = (-2, 0, 3) & \mathbf{y}_3 = (1, -1, -5) \end{array}$$

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TABELA II | PARTE 01/03

ANA LILIAN ALFONSO TOLEDO

$$A = \begin{pmatrix} -1 & 8 & 8 & 7 \\ 0 & -9 & 5 & 9 \\ 0 & 0 & 6 & -1 \\ 0 & 0 & 0 & 3 \end{pmatrix}$$

ANA PAULA MILITZ DORNELES

$$A = \begin{pmatrix} 8 & 6 & 7 & -7 \\ 0 & -1 & 6 & -9 \\ 0 & 0 & 9 & -4 \\ 0 & 0 & 0 & 6 \end{pmatrix}$$

ARTHUR BOGACKI VERISSIMO

$$A = \begin{pmatrix} 7 & 0 & 0 & 0 \\ 2 & -6 & 0 & 0 \\ -1 & 3 & 9 & 0 \\ 6 & 6 & 7 & 8 \end{pmatrix}$$

ARTUR LIMA RIOS

$$A = \begin{pmatrix} -4 & 0 & 0 & 0 \\ -2 & 6 & 0 & 0 \\ 5 & 2 & -2 & 0 \\ -9 & -8 & 8 & 1 \end{pmatrix}$$

BRUNO DOS SANTOS UMPIERRE

$$A = \begin{pmatrix} 3 & -1 & 3 & 3 \\ 0 & 5 & 0 & -4 \\ 0 & 0 & -3 & -9 \\ 0 & 0 & 0 & 4 \end{pmatrix}$$

BRUNO PERUSSATTO

$$A = \begin{pmatrix} 8 & 0 & 0 & 0 \\ 2 & 3 & 0 & 0 \\ 2 & -2 & 2 & 0 \\ 0 & -5 & -3 & -1 \end{pmatrix}$$

CARLOS EDUARDO VELOZO CORREA

$$A = \begin{pmatrix} 4 & 2 & 9 & -5 \\ 0 & -2 & 3 & -7 \\ 0 & 0 & -9 & -9 \\ 0 & 0 & 0 & -7 \end{pmatrix}$$

CELSO MAIA DA SILVA NETO

$$A = \begin{pmatrix} 6 & 9 & 5 & -4 \\ 0 & -2 & -6 & -8 \\ 0 & 0 & -3 & 3 \\ 0 & 0 & 0 & -1 \end{pmatrix}$$

DIEGO RIBEIRO CHAVES

$$A = \begin{pmatrix} 7 & 5 & 1 & 7 \\ 0 & 2 & 2 & 8 \\ 0 & 0 & -5 & 5 \\ 0 & 0 & 0 & 8 \end{pmatrix}$$

EDUARDO DE MEDEIROS DA SILVEIRA

$$A = \begin{pmatrix} -9 & -8 & 0 & 2 \\ 0 & -3 & 2 & -5 \\ 0 & 0 & -4 & -9 \\ 0 & 0 & 0 & 8 \end{pmatrix}$$

ERICK NICOLAS MARTIM SOARES

$$A = \begin{pmatrix} -4 & 0 & 0 & 0 \\ -5 & 4 & 0 & 0 \\ 2 & -1 & -6 & 0 \\ 0 & -5 & -5 & -3 \end{pmatrix}$$

GABRIEL BISOGNIN MORO

$$A = \begin{pmatrix} -4 & -5 & 1 & -1 \\ 0 & -3 & 8 & -4 \\ 0 & 0 & -2 & 0 \\ 0 & 0 & 0 & 2 \end{pmatrix}$$

GABRIEL DI DOMENICO

$$A = \begin{pmatrix} 4 & 1 & 9 & -5 \\ 0 & 1 & 9 & 5 \\ 0 & 0 & 8 & -2 \\ 0 & 0 & 0 & 5 \end{pmatrix}$$

GABRIEL PORTO DE FREITAS

$$A = \begin{pmatrix} -3 & 0 & 0 & 0 \\ 6 & 4 & 0 & 0 \\ 7 & 7 & 8 & 0 \\ 1 & 3 & 8 & -2 \end{pmatrix}$$

GABRIEL SILVA PETTERINE

$$A = \begin{pmatrix} -8 & 0 & 0 & 0 \\ -3 & -5 & 0 & 0 \\ -5 & 9 & 5 & 0 \\ 0 & 4 & -9 & -6 \end{pmatrix}$$

GABRIEL SOUZA BAGGIO

$$A = \begin{pmatrix} 6 & -1 & -1 & 6 \\ 0 & -1 & 7 & -8 \\ 0 & 0 & 3 & 1 \\ 0 & 0 & 0 & -6 \end{pmatrix}$$

GABRIEL STIEGEMEIER

$$A = \begin{pmatrix} 7 & 0 & 0 & 0 \\ -9 & 3 & 0 & 0 \\ -7 & -9 & 6 & 0 \\ -8 & -1 & 9 & 9 \end{pmatrix}$$

GABRIELI MARTINS DE OLIVEIRA

$$A = \begin{pmatrix} -1 & 6 & 1 & -4 \\ 0 & 1 & -2 & 4 \\ 0 & 0 & -8 & -1 \\ 0 & 0 & 0 & 6 \end{pmatrix}$$

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TABELA II | PARTE 02/03

GUILHERME BRIZZI

$$A = \begin{pmatrix} 7 & -8 & 1 & -2 \\ 0 & -2 & 0 & -9 \\ 0 & 0 & -3 & 0 \\ 0 & 0 & 0 & -1 \end{pmatrix}$$

GUILHERME FEREIRA DA SILVA

$$A = \begin{pmatrix} -7 & 0 & 0 & 0 \\ 9 & 2 & 0 & 0 \\ -7 & 2 & 9 & 0 \\ -4 & 8 & -6 & -3 \end{pmatrix}$$

GUILHERME MENEGHETTI EINLOFT

$$A = \begin{pmatrix} 8 & -2 & 0 & 5 \\ 0 & -4 & 4 & -6 \\ 0 & 0 & -1 & 8 \\ 0 & 0 & 0 & -2 \end{pmatrix}$$

GUSTAVO DA SILVA REIS

$$A = \begin{pmatrix} -7 & 0 & 0 & 0 \\ -5 & -4 & 0 & 0 \\ 8 & -8 & 6 & 0 \\ 1 & -5 & -4 & 9 \end{pmatrix}$$

GUSTAVO MONTAGNER DOS SANTOS

$$A = \begin{pmatrix} 8 & -4 & 5 & -8 \\ 0 & 2 & -4 & -9 \\ 0 & 0 & -5 & 0 \\ 0 & 0 & 0 & -7 \end{pmatrix}$$

JAIME ANTONIO DANIEL FILHO

$$A = \begin{pmatrix} 2 & 0 & 0 & 0 \\ 3 & -6 & 0 & 0 \\ -6 & 3 & -2 & 0 \\ -6 & 8 & 0 & 7 \end{pmatrix}$$

JHUAN LUIS ALMEIDA ASSUMPCAO

$$A = \begin{pmatrix} -4 & 0 & 0 & 0 \\ -2 & 7 & 0 & 0 \\ 6 & 6 & 3 & 0 \\ -1 & 3 & 0 & -2 \end{pmatrix}$$

JOAO CARLOS ZUCCHI

$$A = \begin{pmatrix} -9 & 0 & 0 & 0 \\ 3 & 3 & 0 & 0 \\ 2 & -7 & 8 & 0 \\ 2 & -4 & 2 & -8 \end{pmatrix}$$

JOAO PEDRO AZENHA RIGHI

$$A = \begin{pmatrix} -2 & 0 & 0 & 0 \\ -4 & -4 & 0 & 0 \\ 9 & -4 & -6 & 0 \\ -3 & 2 & -2 & 8 \end{pmatrix}$$

JOAO PEDRO RODRIGUES FREIRE

$$A = \begin{pmatrix} -9 & 8 & 1 & -3 \\ 0 & -3 & 3 & -5 \\ 0 & 0 & 5 & -7 \\ 0 & 0 & 0 & -4 \end{pmatrix}$$

JOAO VITOR DA SILVA

$$A = \begin{pmatrix} 9 & 0 & 0 & 0 \\ 6 & 2 & 0 & 0 \\ 3 & -5 & 6 & 0 \\ 9 & 3 & -9 & -1 \end{pmatrix}$$

KAUAN MARUIAMA

$$A = \begin{pmatrix} -5 & 0 & 0 & 0 \\ 8 & -9 & 0 & 0 \\ -3 & -4 & -6 & 0 \\ 9 & -2 & -9 & 9 \end{pmatrix}$$

LARISSA RODRIGUES SILVEIRA

$$A = \begin{pmatrix} 4 & -2 & 9 & -9 \\ 0 & -4 & -1 & 3 \\ 0 & 0 & -5 & -5 \\ 0 & 0 & 0 & -7 \end{pmatrix}$$

LEANDRO BRUM DA SILVA LACORTE

$$A = \begin{pmatrix} -3 & -8 & 4 & -3 \\ 0 & 6 & -8 & -4 \\ 0 & 0 & 8 & 2 \\ 0 & 0 & 0 & 2 \end{pmatrix}$$

LEANDRO OLIVEIRA DO NASCIMENTO

$$A = \begin{pmatrix} 8 & 0 & 0 & 0 \\ 6 & -1 & 0 & 0 \\ 0 & -6 & 6 & 0 \\ 4 & -1 & -4 & -4 \end{pmatrix}$$

LUCAS GUEDES CORREIA

$$A = \begin{pmatrix} -4 & 8 & -8 & 2 \\ 0 & 7 & -3 & -7 \\ 0 & 0 & -5 & -8 \\ 0 & 0 & 0 & 2 \end{pmatrix}$$

LUCAS XAVIER PAIRE

$$A = \begin{pmatrix} 7 & -8 & -7 & 6 \\ 0 & -2 & 6 & 8 \\ 0 & 0 & 2 & -6 \\ 0 & 0 & 0 & -7 \end{pmatrix}$$

LUIS FERNANDO DA CRUZ ANTUNES

$$A = \begin{pmatrix} -6 & 0 & 0 & 0 \\ -3 & -5 & 0 & 0 \\ -2 & -8 & 9 & 0 \\ 9 & 9 & -4 & -8 \end{pmatrix}$$

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TABELA II | PARTE 03/03

LUIS GUSTAVO WERLE TOZEVICH

$$A = \begin{pmatrix} -2 & 0 & 0 & 0 \\ -3 & 8 & 0 & 0 \\ 3 & 8 & -1 & 0 \\ -9 & 7 & -6 & 4 \end{pmatrix}$$

LUIS HENRIQUE CHESANI

$$A = \begin{pmatrix} -5 & -4 & 8 & 3 \\ 0 & 6 & 0 & -7 \\ 0 & 0 & 1 & -2 \\ 0 & 0 & 0 & -1 \end{pmatrix}$$

LUIS HENRIQUE SILVEIRA POZZEBON

$$A = \begin{pmatrix} 9 & 0 & 0 & 0 \\ -8 & -1 & 0 & 0 \\ 2 & 3 & 6 & 0 \\ -9 & 6 & -8 & -3 \end{pmatrix}$$

MATHIAS ECKERT RECKTENVALD

$$A = \begin{pmatrix} 1 & 0 & 0 & 0 \\ -8 & 8 & 0 & 0 \\ -9 & 1 & -8 & 0 \\ 3 & -7 & -6 & -4 \end{pmatrix}$$

MIGUEL BRONDANI

$$A = \begin{pmatrix} -6 & 0 & 0 & 0 \\ 1 & 5 & 0 & 0 \\ 5 & 0 & 2 & 0 \\ 2 & -5 & 7 & 7 \end{pmatrix}$$

NILTON DA SILVA RIBEIRO FILHO

$$A = \begin{pmatrix} -4 & 4 & -3 & -4 \\ 0 & 2 & -7 & -6 \\ 0 & 0 & 1 & -6 \\ 0 & 0 & 0 & 3 \end{pmatrix}$$

PEDRO DE ANDRADE SANTOS

$$A = \begin{pmatrix} 8 & 3 & -6 & 2 \\ 0 & -4 & -4 & -4 \\ 0 & 0 & 3 & 4 \\ 0 & 0 & 0 & -6 \end{pmatrix}$$

PEDRO HENRIQUE DA SILVA HINERASKY

$$A = \begin{pmatrix} 4 & -9 & 8 & 2 \\ 0 & 7 & -6 & -7 \\ 0 & 0 & -7 & 9 \\ 0 & 0 & 0 & -9 \end{pmatrix}$$

RAMON GODOY IZIDORO

$$A = \begin{pmatrix} -6 & 0 & 0 & 0 \\ 3 & -4 & 0 & 0 \\ 6 & -3 & -5 & 0 \\ -1 & -2 & -2 & 8 \end{pmatrix}$$

RIAN BILHAO PEREIRA

$$A = \begin{pmatrix} 8 & 0 & 0 & 0 \\ -5 & -6 & 0 & 0 \\ -1 & -2 & 1 & 0 \\ -4 & 4 & -7 & -1 \end{pmatrix}$$

ROBERTO JOSE MAHL

$$A = \begin{pmatrix} -4 & 1 & 8 & -2 \\ 0 & -5 & 5 & 7 \\ 0 & 0 & 2 & -5 \\ 0 & 0 & 0 & -3 \end{pmatrix}$$

THIERRY WEISSHEIMER MONTEIRO

$$A = \begin{pmatrix} 5 & 0 & 0 & 0 \\ -1 & 4 & 0 & 0 \\ 2 & -2 & -7 & 0 \\ -9 & -8 & 1 & 1 \end{pmatrix}$$

Distribuição | Questão 03

TABELA III | PARTE 01/03

ANA LILIAN ALFONSO TOLEDO

$$B = \begin{pmatrix} -5 & -1 & 1 & -2 \\ 0 & -3 & 0 & -6 \\ 0 & 8 & 6 & -3 \\ 0 & -2 & 0 & 5 \end{pmatrix}$$

ANA PAULA MILITZ DORNELES

$$B = \begin{pmatrix} -9 & -9 & -4 & 1 \\ -3 & 3 & -2 & 5 \\ 0 & 0 & -8 & -3 \\ 0 & 0 & 0 & 5 \end{pmatrix}$$

ARTHUR BOGACKI VERISSIMO

$$B = \begin{pmatrix} 7 & -4 & 0 & 0 \\ 0 & -7 & 0 & 0 \\ 0 & 7 & -7 & 8 \\ 8 & -6 & 5 & -3 \end{pmatrix}$$

ARTUR LIMA RIOS

$$B = \begin{pmatrix} -5 & 6 & 5 & -7 \\ 0 & -6 & -6 & 0 \\ 0 & -4 & -6 & 0 \\ 0 & 2 & -4 & -7 \end{pmatrix}$$

BRUNO DOS SANTOS UMPIERRE

$$B = \begin{pmatrix} -6 & 0 & 0 & 8 \\ 1 & -3 & 0 & 1 \\ 5 & 9 & 3 & -1 \\ 6 & 0 & 0 & 0 \end{pmatrix}$$

BRUNO PERUSSATTO

$$B = \begin{pmatrix} 5 & 2 & -9 & 0 \\ 0 & 4 & -3 & 0 \\ 0 & -7 & 6 & 0 \\ -7 & -5 & -4 & 4 \end{pmatrix}$$

CARLOS EDUARDO VELOZO CORREA

$$B = \begin{pmatrix} -6 & -5 & 2 & 6 \\ 0 & 8 & 0 & 9 \\ 0 & -6 & 9 & 1 \\ 0 & 8 & 0 & 8 \end{pmatrix}$$

CELSO MAIA DA SILVA NETO

$$B = \begin{pmatrix} 9 & 1 & 0 & -1 \\ 0 & 7 & 0 & 1 \\ 4 & -2 & 1 & 7 \\ 0 & 6 & 0 & -1 \end{pmatrix}$$

DIEGO RIBEIRO CHAVES

$$B = \begin{pmatrix} -7 & -4 & 3 & 2 \\ -3 & 1 & 6 & -1 \\ 0 & 0 & -8 & 0 \\ 0 & 0 & 0 & 9 \end{pmatrix}$$

EDUARDO DE MEDEIROS DA SILVEIRA

$$B = \begin{pmatrix} -6 & 0 & 6 & 0 \\ -8 & -2 & 2 & -9 \\ 5 & 0 & 6 & 0 \\ 1 & 0 & -9 & -5 \end{pmatrix}$$

ERICK NICOLAS MARTIM SOARES

$$B = \begin{pmatrix} -8 & 0 & -1 & 0 \\ 5 & 7 & 2 & 0 \\ -5 & 0 & 6 & 0 \\ 9 & -4 & -1 & -7 \end{pmatrix}$$

GABRIEL BISOGNIN MORO

$$B = \begin{pmatrix} 7 & 9 & 0 & 0 \\ 0 & 2 & 0 & 0 \\ -2 & -8 & -1 & -9 \\ 5 & 6 & -2 & -2 \end{pmatrix}$$

GABRIEL DI DOMENICO

$$B = \begin{pmatrix} -4 & 0 & 3 & 0 \\ -7 & 9 & 0 & -7 \\ 1 & 0 & -4 & 0 \\ -7 & 0 & 8 & -8 \end{pmatrix}$$

GABRIEL PORTO DE FREITAS

$$B = \begin{pmatrix} -8 & 0 & -3 & 0 \\ 8 & 3 & -7 & 9 \\ 0 & 0 & 7 & 0 \\ -5 & 5 & -7 & 0 \end{pmatrix}$$

GABRIEL SILVA PETTERINE

$$B = \begin{pmatrix} -8 & 0 & 0 & 0 \\ -5 & 0 & -5 & -7 \\ 6 & -1 & 5 & 5 \\ -8 & 0 & 0 & -1 \end{pmatrix}$$

GABRIEL SOUZA BAGGIO

$$B = \begin{pmatrix} 9 & -1 & 0 & -9 \\ 0 & 3 & 0 & -6 \\ -5 & -4 & -6 & -3 \\ 0 & -4 & 0 & -9 \end{pmatrix}$$

GABRIEL STIEGEMEIER

$$B = \begin{pmatrix} 6 & 5 & 0 & 0 \\ 0 & -7 & 0 & 0 \\ -2 & 8 & 3 & -2 \\ -1 & 6 & -6 & -7 \end{pmatrix}$$

GABRIELI MARTINS DE OLIVEIRA

$$B = \begin{pmatrix} 2 & 0 & 0 & 0 \\ 8 & -7 & -5 & 8 \\ 8 & 0 & -6 & 0 \\ 6 & 2 & 7 & -5 \end{pmatrix}$$

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TABELA III | PARTE 02/03

GUILHERME BRIZZI

$$B = \begin{pmatrix} -2 & 6 & 7 & 4 \\ 0 & -5 & 0 & -2 \\ 0 & 8 & -3 & -1 \\ 0 & -9 & 0 & 9 \end{pmatrix}$$

GUILHERME FEREIRA DA SILVA

$$B = \begin{pmatrix} 2 & -6 & -3 & 0 \\ 0 & -1 & -1 & 0 \\ 0 & 2 & 5 & 0 \\ 6 & 2 & -1 & 9 \end{pmatrix}$$

GUILHERME MENEGHETTI EINLOFT

$$B = \begin{pmatrix} 4 & 9 & -6 & -3 \\ 2 & -8 & -5 & -7 \\ 0 & 0 & 3 & 0 \\ 0 & 0 & 7 & -5 \end{pmatrix}$$

GUSTAVO DA SILVA REIS

$$B = \begin{pmatrix} -9 & 8 & -6 & 5 \\ 0 & 7 & 0 & -1 \\ 0 & 0 & -6 & 9 \\ 0 & 6 & 0 & -1 \end{pmatrix}$$

GUSTAVO MONTAGNER DOS SANTOS

$$B = \begin{pmatrix} -8 & 9 & 0 & 3 \\ 0 & -1 & 0 & -2 \\ -6 & 5 & -1 & 9 \\ 0 & -4 & 0 & 9 \end{pmatrix}$$

JAIME ANTONIO DANIEL FILHO

$$B = \begin{pmatrix} 9 & 1 & 0 & 0 \\ 7 & -5 & 0 & 0 \\ 5 & 3 & 5 & 2 \\ -3 & -9 & 0 & 1 \end{pmatrix}$$

JHUAN LUIS ALMEIDA ASSUMPCAO

$$B = \begin{pmatrix} 7 & 0 & 0 & -7 \\ -2 & -2 & 5 & -8 \\ 0 & 0 & -6 & 9 \\ 0 & 0 & 9 & -8 \end{pmatrix}$$

JOAO CARLOS ZUCCHI

$$B = \begin{pmatrix} 3 & 3 & -9 & 0 \\ 0 & -3 & 0 & 0 \\ -4 & -7 & 0 & -9 \\ 0 & -3 & 0 & -2 \end{pmatrix}$$

JOAO PEDRO AZENHA RIGHI

$$B = \begin{pmatrix} 3 & -1 & 7 & 6 \\ -7 & -4 & 1 & -4 \\ 0 & 0 & -9 & 0 \\ 0 & 0 & 2 & 7 \end{pmatrix}$$

JOAO PEDRO RODRIGUES FREIRE

$$B = \begin{pmatrix} -3 & -3 & 0 & 0 \\ -2 & 7 & 0 & 0 \\ -2 & -2 & 7 & 0 \\ 6 & 1 & -9 & -1 \end{pmatrix}$$

JOAO VITOR DA SILVA

$$B = \begin{pmatrix} 9 & 4 & 2 & 2 \\ 8 & -7 & 4 & 2 \\ 0 & 0 & 4 & 1 \\ 0 & 0 & 0 & -9 \end{pmatrix}$$

KAUAN MARUIAMA

$$B = \begin{pmatrix} 6 & 0 & -1 & 0 \\ 2 & -7 & 9 & 6 \\ 0 & 0 & -2 & 0 \\ 4 & 2 & 9 & 5 \end{pmatrix}$$

LARISSA RODRIGUES SILVEIRA

$$B = \begin{pmatrix} -7 & 0 & -9 & -4 \\ 3 & -1 & 0 & 7 \\ 0 & 0 & 8 & 9 \\ 0 & 0 & 3 & -2 \end{pmatrix}$$

LEANDRO BRUM DA SILVA LACORTE

$$B = \begin{pmatrix} 2 & 1 & 3 & -6 \\ 4 & -7 & 3 & -2 \\ 0 & 0 & -2 & 9 \\ 0 & 0 & 0 & -3 \end{pmatrix}$$

LEANDRO OLIVEIRA DO NASCIMENTO

$$B = \begin{pmatrix} 7 & 0 & 0 & 0 \\ 7 & -7 & -5 & 1 \\ -3 & 5 & 9 & 6 \\ 4 & 0 & 0 & -5 \end{pmatrix}$$

LUCAS GUEDES CORREIA

$$B = \begin{pmatrix} 2 & 0 & -9 & -7 \\ 7 & -4 & -8 & 9 \\ 0 & 0 & 2 & -7 \\ 0 & 0 & -4 & -4 \end{pmatrix}$$

LUCAS XAVIER PAIRE

$$B = \begin{pmatrix} 2 & 7 & 7 & 0 \\ 0 & -1 & -9 & 0 \\ 0 & -6 & -1 & 0 \\ 5 & -5 & 4 & 3 \end{pmatrix}$$

LUIS FERNANDO DA CRUZ ANTUNES

$$B = \begin{pmatrix} 2 & 0 & 0 & 6 \\ 6 & 4 & 0 & -2 \\ -4 & -4 & -3 & -7 \\ 3 & 0 & 0 & 8 \end{pmatrix}$$

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TABELA III | PARTE 03/03

LUIS GUSTAVO WERLE TOZEVICH

$$B = \begin{pmatrix} -4 & -8 & -5 & -4 \\ 0 & -5 & 1 & 0 \\ 0 & 0 & -3 & 0 \\ -8 & 3 & -2 & 1 \end{pmatrix}$$

LUIS HENRIQUE CHESANI

$$B = \begin{pmatrix} -2 & -7 & 7 & 6 \\ 0 & -2 & 0 & 0 \\ -1 & -3 & 8 & 5 \\ 0 & 7 & 0 & 2 \end{pmatrix}$$

LUIS HENRIQUE SILVEIRA POZZEBON

$$B = \begin{pmatrix} -3 & -5 & -1 & 4 \\ 0 & -6 & -9 & 0 \\ 0 & -6 & 6 & 0 \\ 0 & 5 & 9 & -1 \end{pmatrix}$$

MATHIAS ECKERT RECKTENVALD

$$B = \begin{pmatrix} -8 & 3 & -5 & 1 \\ 0 & 2 & 0 & -5 \\ -1 & 7 & 6 & -5 \\ 0 & 0 & 0 & 5 \end{pmatrix}$$

MIGUEL BRONDANI

$$B = \begin{pmatrix} 4 & 0 & -1 & 7 \\ 3 & 3 & 7 & -4 \\ 0 & 0 & -8 & 8 \\ 0 & 0 & 6 & 4 \end{pmatrix}$$

NILTON DA SILVA RIBEIRO FILHO

$$B = \begin{pmatrix} -4 & -8 & 0 & 0 \\ -8 & -8 & 0 & 0 \\ -7 & 9 & 7 & 0 \\ 9 & -9 & 9 & -8 \end{pmatrix}$$

PEDRO DE ANDRADE SANTOS

$$B = \begin{pmatrix} 8 & 0 & -6 & 0 \\ 9 & 7 & -1 & -5 \\ 0 & 0 & 9 & 0 \\ 3 & -6 & -2 & -5 \end{pmatrix}$$

PEDRO HENRIQUE DA SILVA HINERASKY

$$B = \begin{pmatrix} -4 & 0 & 0 & 9 \\ -5 & 5 & -9 & 1 \\ 4 & 0 & -9 & 3 \\ 1 & 0 & 0 & 6 \end{pmatrix}$$

RAMON GODOY IZIDORO

$$B = \begin{pmatrix} 8 & 0 & 1 & 7 \\ -1 & 5 & 7 & -6 \\ 0 & 0 & -4 & 3 \\ 0 & 0 & -2 & 6 \end{pmatrix}$$

RIAN BILHAO PEREIRA

$$B = \begin{pmatrix} -4 & -8 & 0 & 0 \\ -5 & 0 & 0 & 0 \\ 3 & -1 & 2 & 0 \\ 5 & 6 & 4 & -8 \end{pmatrix}$$

ROBERTO JOSE MAHL

$$B = \begin{pmatrix} -5 & 6 & -8 & 8 \\ 0 & 6 & 0 & -6 \\ 0 & 5 & -2 & 6 \\ 0 & -8 & 0 & -4 \end{pmatrix}$$

THIERRY WEISSHEIMER MONTEIRO

$$B = \begin{pmatrix} -3 & -1 & 8 & 7 \\ -8 & 7 & 5 & 7 \\ 0 & 0 & -6 & -4 \\ 0 & 0 & 0 & 9 \end{pmatrix}$$