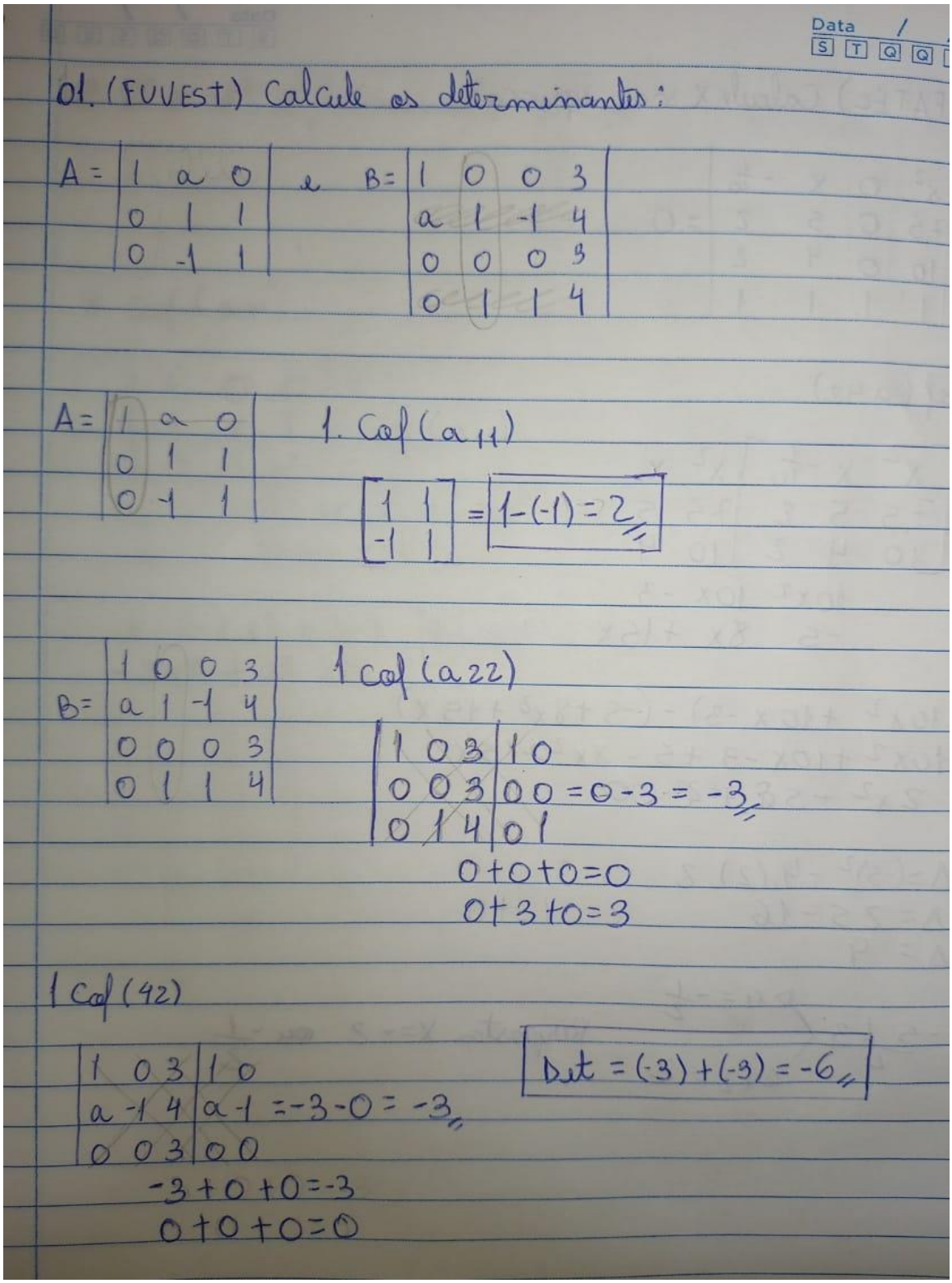
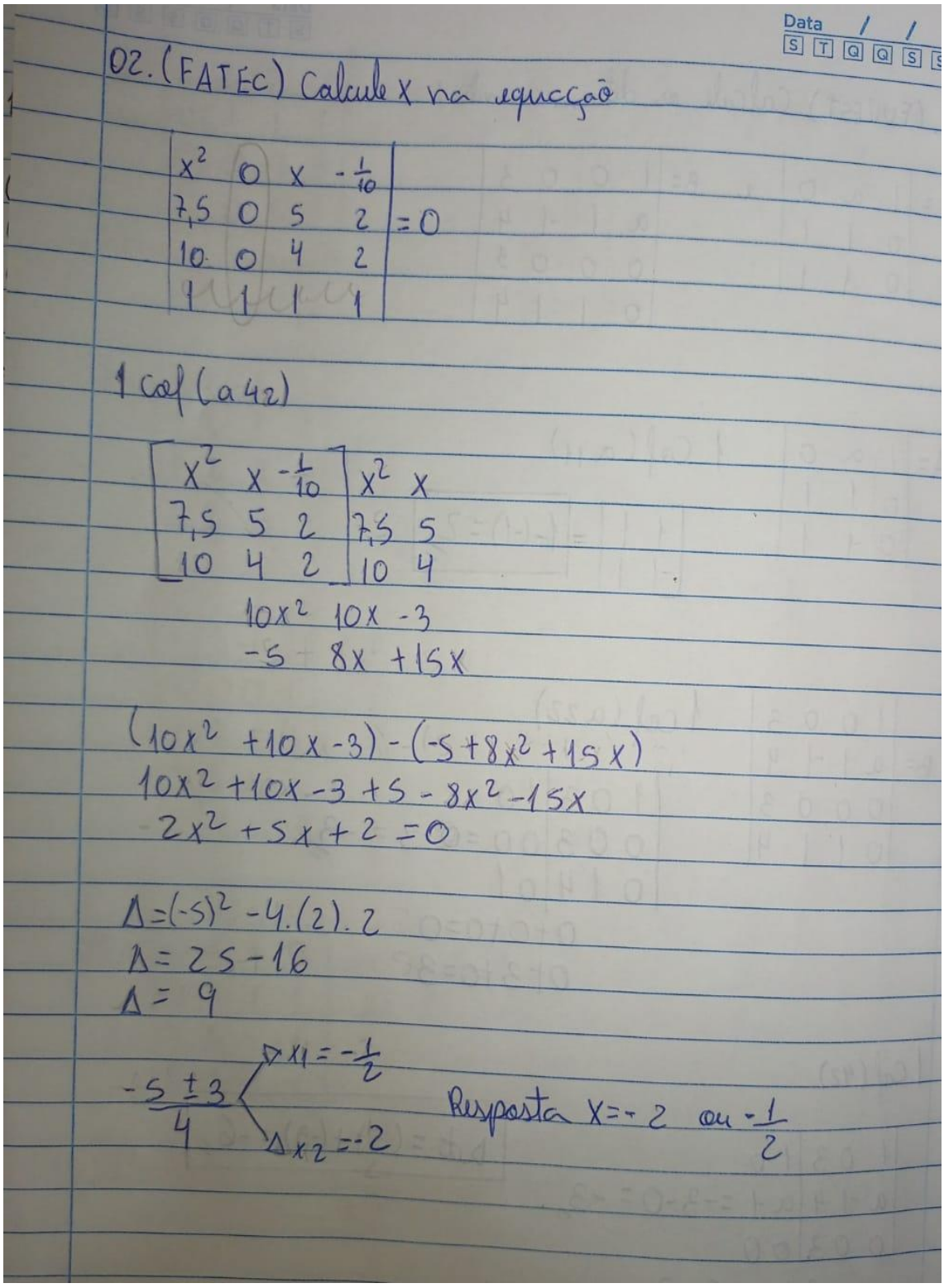
Nome: Mikaela dos Santos Ferreira Prontuário: 1890336 CTII-348

Determinantes - Cálculo Geral - Tarefa Básica

Exercício 1



Exercício 2



Data / /
S T Q Q S

02. (FATEC) Calcule x na equação

$$\begin{vmatrix} x^2 & 0 & x & -\frac{1}{10} \\ 7,5 & 0 & 5 & 2 \\ 10 & 0 & 4 & 2 \\ 1 & 1 & 1 & 1 \end{vmatrix} = 0$$

1 col (a 42)

$$\begin{bmatrix} x^2 & x & -\frac{1}{10} \\ 7,5 & 5 & 2 \\ 10 & 4 & 2 \end{bmatrix} \begin{matrix} x^2 & x \\ 7,5 & 5 \\ 10 & 4 \end{matrix}$$

$10x^2 \quad 10x \quad -3$
$-5 \quad 8x \quad +15x$

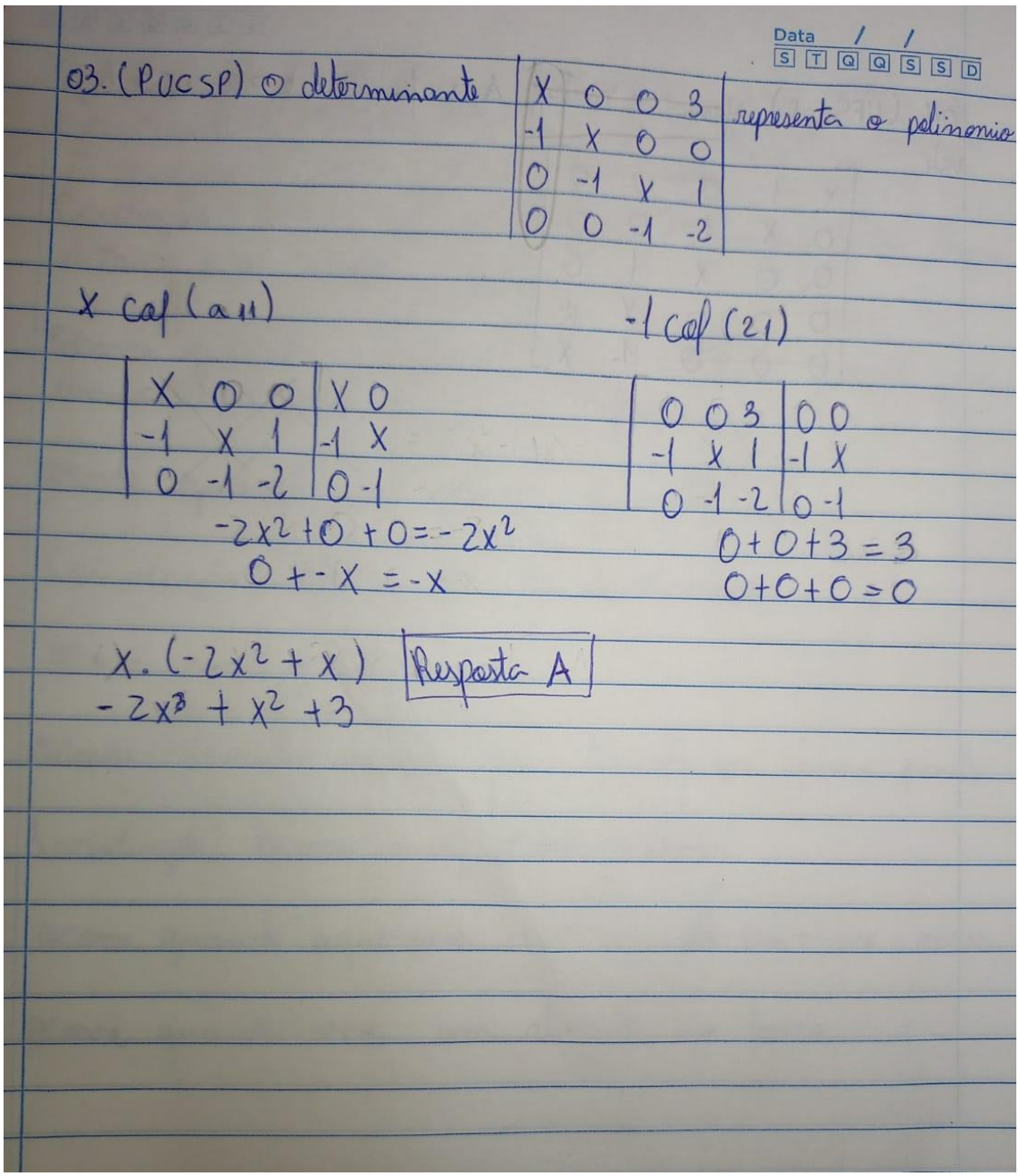
$(10x^2 + 10x - 3) - (-5 + 8x^2 + 15x)$
$10x^2 + 10x - 3 + 5 - 8x^2 - 15x$
$2x^2 + 5x + 2 = 0$

$\Delta = (-5)^2 - 4.(2).2$
$\Delta = 25 - 16$
$\Delta = 9$

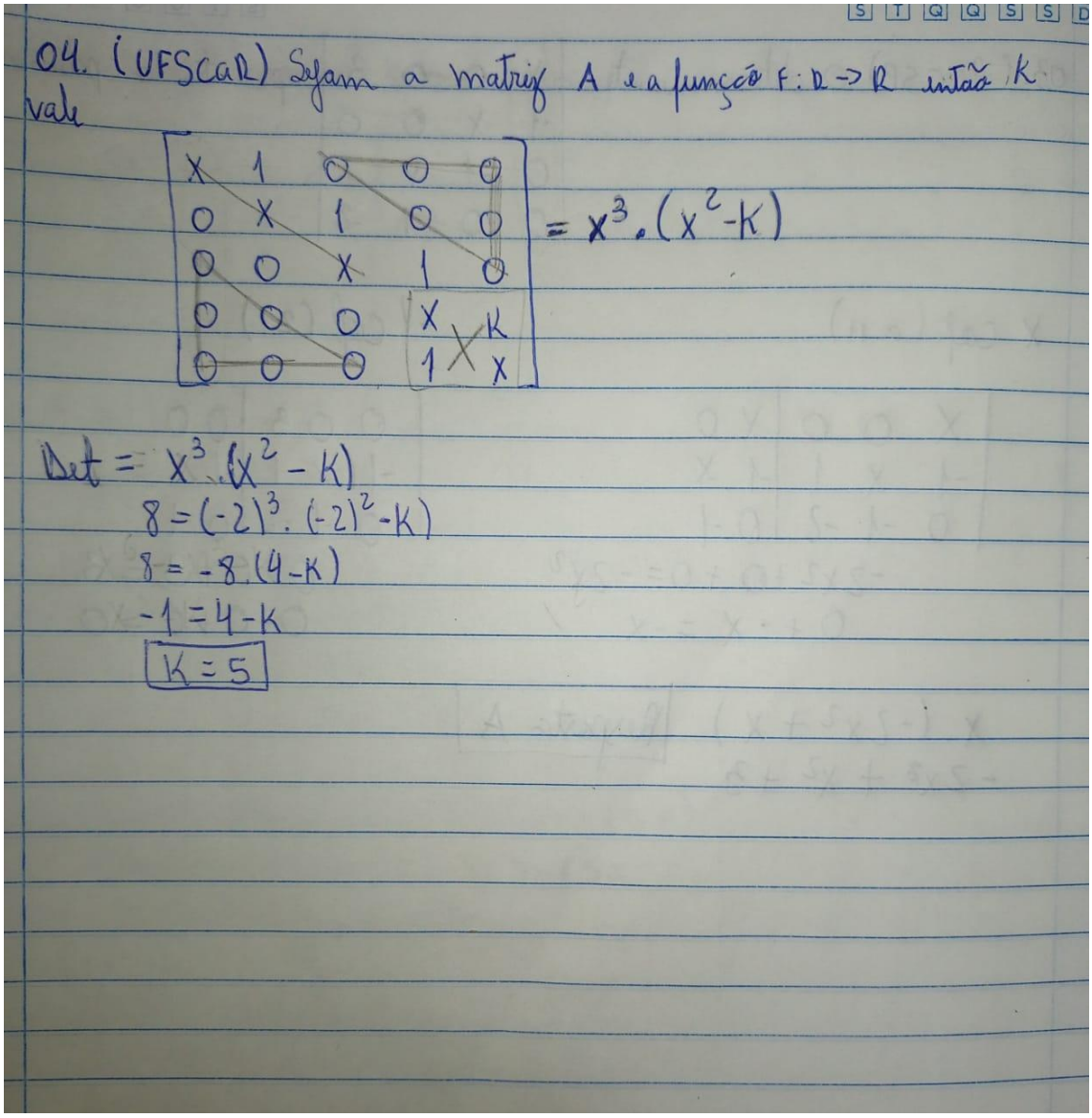
$\frac{-5 \pm 3}{4}$ $\begin{cases} x_1 = -\frac{1}{2} \\ x_2 = -2 \end{cases}$

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

Exercício 3


Data / /
S T Q Q S S D
03. (PUCSP) O determinante
| X 0 0 3 |
| -1 X 0 0 |
| 0 -1 X 1 |
| 0 0 -1 -2 |
representa o polinomio
X cof(a11)
-1 cof(21)
| X 0 0 |
| -1 X 1 |
| 0 -1 -2 |
| X 0 |
| -1 X |
| 0 -1 |
-2x² + 0 + 0 = -2x²
0 + -X = -X
| 0 0 3 |
| -1 X 1 |
| 0 -1 -2 |
| 0 0 |
| -1 X |
| 0 -1 |
0 + 0 + 3 = 3
0 + 0 + 0 = 0
X . (-2x² + X)
-2x³ + x² + 3
Resposta A

Exercício 4


04. (UFSCar) Sejam a matriz A e a função f: R -> R tais. K vale
$\begin{bmatrix} x & 1 & 0 & 0 & 0 \\ 0 & x & 1 & 0 & 0 \\ 0 & 0 & x & 1 & 0 \\ 0 & 0 & 0 & x & k \\ 0 & 0 & 0 & 1 & x \end{bmatrix} = x^3 \cdot (x^2 - k)$
Det = $x^3 \cdot (x^2 - k)$
$8 = (-2)^3 \cdot (-2)^2 - k)$
$8 = -8 \cdot (4 - k)$
$-1 = 4 - k$
$k = 5$