Problem 1 (35 Points)

1a) (3 × 5 × 1 Point, 15 Points)
Which of the following statements are true and which are false?

No.	Task/Question/Judgement	True	False
B.2)	The system $A = \begin{bmatrix} 0 & 1 \\ -1 & -1 \end{bmatrix}$, $B = \begin{bmatrix} 0 \\ 1 \end{bmatrix}$, $C = \begin{bmatrix} 0 & 1 \end{bmatrix}$ is described by $G(s) = \frac{s}{s^2 + s + 1}$ in frequency domain.	◯	◯

Example to show the new exam format and evaluation scheme.

Mark the correct solution in the following statements.

1a) (5 × 1 Point, 5 Points)

B2) (1 Point)

The system $A = \begin{bmatrix} 0 & 1 \\ -1 & -1 \end{bmatrix}$, $B = \begin{bmatrix} 0 \\ 1 \end{bmatrix}$, $C = \begin{bmatrix} 0 & 1 \end{bmatrix}$ is described by

- ○ $G(s) = \frac{s}{s^2 + 2s + 1}$
- ○ $G(s) = \frac{s+1}{s^2 + s + 1}$
- ⊗ $G(s) = \frac{s}{s^2 + s + 1}$ ✓

in frequency domain.

1

Example to show the new exam format and evaluation scheme.

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B2) (1 Point)

The system $A = \begin{bmatrix} 0 & 1 \\ -1 & -1 \end{bmatrix}$, $B = \begin{bmatrix} 0 \\ 1 \end{bmatrix}$, $C = \begin{bmatrix} 0 & 1 \end{bmatrix}$ is described by

- ☒ $G(s) = \frac{s}{s^2 + 2s + 1}$ f
- ○ $G(s) = \frac{s+1}{s^2 + s + 1}$
- ☒ $G(s) = \frac{s}{s^2 + s + 1}$

in frequency domain.

0

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- ◯ $G(s) = \frac{s}{s^2 + s + 1}$

in frequency domain.

f

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Example to show the new exam format and evaluation scheme.

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B2) (1 Point)

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in frequency domain.

0