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Problem 1 (35 Points)

1a) $(3 \times 5 \times 1 \text{ Point}, 15 \text{ Points})$ 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.	\bigcirc	0

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Example to show the new exam format and evaluation scheme.

Mark the correct solution in the following statements.

1a) $(5 \times 1 \text{ Point}, 5 \text{ Points})$

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 $\bigcirc \quad G(s) = \frac{s}{s^2 + 2s + 1}$ $\bigcirc \quad G(s) = \frac{s+1}{s^2 + s + 1}$ $\bigotimes \quad G(s) = \frac{s}{s^2 + s + 1} \quad \checkmark$



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1a) $(5 \times 1 \text{ Point}, 5 \text{ Points})$

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
 $\bigcirc \quad G(s) = \frac{s}{s^2 + 2s + 1}$
 $\bigcirc \quad G(s) = \frac{s+1}{s^2 + s + 1}$
 $\bigcirc \quad G(s) = \frac{s}{s^2 + s + 1}$

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Mark the correct solution in the following statements.

1a) $(5 \times 1 \text{ Point}, 5 \text{ Points})$

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 $\bigcirc G(s) = \frac{s}{2}$