Take Test: Test 2 (2018-19)

Test Information

Description	
Instructions	
Timed Test	This test has a time limit of 1 hour.This test will save and be submitted automatically when the time expires. Warnings appear when **half the time**, **5 minutes**, **1 minute**, and **30 seconds** remain.
Multiple Attempts	This Test allows 3 attempts. This is attempt number 1.
Force Completion	This Test can be saved and resumed at any point until time has expired. The timer will continue to run if you leave the test.
	This test does not allow backtracking. Changes to the answer after submission are prohibited.

⚠ Moving to the next question prevents changes to this answer.

Question **3** of **8**

Question 3

12 points Save Answer

Consider a MIMO wireless communication system, where the Cartesian coordinates of the Tx and Rx antenna array elements are given by the columns of the following matrices

$$\text{Tx} : [\underline{\overline{r}}_1, \underline{\overline{r}}_2] = \begin{bmatrix} 0, & 0 \\ -0.5, & 0.5 \\ 0, & 0 \end{bmatrix} \text{ in units of half-wavelength.}$$

$$\text{Rx} : [\underline{r}_1, \underline{r}_2] = \begin{bmatrix} -2, & +2 \\ 0, & 0 \\ 0, & 0 \end{bmatrix} \text{ in units of half-wavelength.}$$

Which of the following statements associated with the geometry (Cartesian coordinates) of its virtual MISO wireless communication system is correct?

(a) $\begin{bmatrix} -2, & 2, & -2, & 2 \\ -0.5, & -0.5, & 0.5, & 0.5 \\ 0, & 0, & 0, & 0 \end{bmatrix}$ (i.e. a planar array).

(b) $\begin{bmatrix} -0.5, & -0.5, & 0.5, & 0.5 \\ -2, & 2, & -2, & 2 \\ 0, & 0, & 0, & 0 \end{bmatrix}$ (i.e. a planar array).

(c) $\begin{bmatrix} -2.5, & 1.5, & -1.5, & 2.5 \\ 0, & 0, & 0, & 0 \\ 0, & 0, & 0, & 0 \end{bmatrix}$ (i.e. a linear array).

(d) $\begin{bmatrix} 0, & 0, & 0, & 0 \\ -2.5, & 1.5, & -1.5, & 2.5 \\ 0, & 0, & 0, & 0 \end{bmatrix}$ (i.e. a linear array).

(e) None of the above

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- a
- b
- c
- d
- e

Moving to the next question prevents changes to this answer.

Question **3** of **8**