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 **7** of **8** ▷

Question 7 | **13 points** | Save Answer |

Consider an antenna array systems of N elements operating in the presence M co-channel sources $(M < N)$. If $\underline{S}_i$ is the manifold vector associated with the ith source and $\mathbb{E}_s$ and $\mathbb{E}_n$ denote the matrices with columns the signal eigenvectors and the noise eigenvectors respectively of data covariance matrix $\mathbb{R}_{xx}$ then which of the following expresssions is correct?

(a) $\mathbb{E}_n.\mathbb{E}_n^H.\underline{S}_i = \underline{S}_i$

(b) $\mathbb{E}_s.\mathbb{E}_s^H.\underline{S}_i = \underline{0}$

(c) $\left(\mathbb{I}_N - \mathbb{E}_n.\mathbb{E}_n^H\right).\underline{S}_i = \underline{0}$

(d) $\left(\mathbb{I}_N - \mathbb{E}_s.\mathbb{E}_s^H\right).\underline{S}_i = \underline{S}_i$

(e) None of the above.

○ a

○ b

○ c

○ d

○ e

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