

Take Test: Test 3 (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.

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Question 9

9 points

Save Answer

Consider a beamformer which employs a uniform array of N antennas with half-wavelength inter-antenna spacing. This beamformer operates in the presence of a desired signal with direction $(\theta = 30^\circ, \phi = 0^\circ)$ and two co-channel interferences of known directions $(50^\circ, 0)$ and $(120^\circ, 0)$. The weight vector, normalised to have unity norm magnitude, to complete suppression of the two cochannel interferences is

(a) $[0.4391 + 0.1619i, -0.3796 - 0.2400i, 0.3981 - 0.0000i, -0.3796 + 0.2400i, 0.4391 - 0.1619i]^T$

(b) $[0.4391 - 0.1619i, -0.3796 - 0.2400i, 0.3981 - 0.0000i, -0.3796 + 0.2400i, 0.4391 + 0.1619i]^T$

(c) $[0.4391 - 0.1619i, 0.3796 - 0.2400i, 0.3981 - 0.0000i, 0.3796 + 0.2400i, 0.4391 + 0.1619i]^T$

(d) $[0.4391 - 0.1619i, 0.3796 + 0.2400i, 0.3981 - 0.0000i, 0.3796 - 0.2400i, 0.4391 + 0.1619i]^T$

(e) None of the above

☐ a

☐ b

☐ c

☐ d

☐ e



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