

## Take Test: Test 1 (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.

Close Window

 Moving to the next question prevents changes to this answer.

Question 9 of 10 &gt;

## Question 9

10 points

Save Answer

Consider that one of the paths from the transmitter of a CDMA user arrives at the reference point of an antenna array CDMA receiver from direction (azimuth, elevation) =  $(60^\circ, 0^\circ)$ . For this path, if the Cartesian coordinates of the antenna array elements are given by the columns of the following matrix

$$[r_1, r_2, r_3] = \begin{bmatrix} -1, & 0, & +1 \\ 0, & 0, & 0 \\ 0, & 0, & 0 \end{bmatrix} \text{ in units of half-wavelength,}$$

then manifold vector is

- (a)  $\underline{S}(\theta) = [j, \ 0 \ -j]$ ;
- (b)  $\underline{S}(\theta) = [-j, \ 0 \ j]$ ;
- (c)  $\underline{S}(\theta) = [j, \ 1 \ -j]$ ;
- (d)  $\underline{S}(\theta) = [-j, \ 1 \ j]$ ;
- (e) none of the above.


☐ a


☐ b

☐ c

☐ d

☐ e

 Moving to the next question prevents changes to this answer.

Question **9** of **10** 

Close Window