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 **4** of **8**

Question 4

12 points Save Answer

Consider a linear array of 5 Rx-antennas having the following Cartesian coordinates:

$$[\underline{r}_1, \underline{r}_2, \underline{r}_3, \underline{r}_4, \underline{r}_5] = \begin{bmatrix} -5, & -1, & +1, & +2, & +3 \\ 0, & 0, & 0, & 0, & 0, \\ 0, & 0, & 0, & 0, & 0, \end{bmatrix} \text{ in units of half-wavelength.}$$

The rate of change of the arclength $\dot{s}(\theta)$ of the array manifold for a source with Direction-of-Arrival (azimuth) $\theta = 30^\circ$ is

(a) $\dot{s}(30^\circ) = 19.631$;
(b) $\dot{s}(30^\circ) = 9.9346$;
(c) $\dot{s}(30^\circ) = 5.4414$;
(d) $\dot{s}(30^\circ) = 3.1623$;
(e) none of the above.

- a
- b
- c
- d
- e

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

Question **4** of **8**