Congratulations! You passed!

Grade received 100% To pass 80% or higher

Go to next item

1. Consider a robot with 7 joints and a space Jacobian with a maximum rank of 6 over all configurations of the robot. At the current configuration, the rank of the space Jacobian is 5. Which of the following statements is true? Select all that apply. **1 / 1 point**

- [x] The robot is redundant with respect to the task of generating arbitrary end-effector twists.

  Correct
  The robot is capable of 6-dimensional twists at certain configurations, and it has more joints than needed to do so.

- [ ] The robot is kinematically deficient with respect to the task of generating arbitrary end-effector twists.
- [x] The robot is at a singularity.

  Correct
  The rank of the Jacobian is less than the maximum possible, so the robot is at a singularity.

2. Consider a robot with 7 joints and a space Jacobian with a maximum rank of 3 over all configurations of the robot. At the current configuration, the rank of the space Jacobian is 3. Which of the following statements is true? Select all that apply. **1 / 1 point**

- [ ] The robot is redundant with respect to the task of generating arbitrary end-effector twists.

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