

# ME 639: Introduction to Robotics

## IIT Gandhinagar

Midsem Exam

Vignesh Ramakrishnan

21310037

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### **1 Task 5**

Yes, they are.

### **2 Task 6**

No, origins do not depend on particular joint positions and could also be located outside the physical link i.e. in open space

### **3 Task 7**

Yes it is true.

### **4 Task 8**

Yes, usually and the product is not commutative in general. Also, there might be a gimbal-lock-like situation (all three axes get in a parallel planar frame) which may not be accounted for in sequence.

### **5 Task 9**

Yes, as it is a rigid transformation (i.e. no amplification/attenuation of component/link sizes).