Quiz 5

- Due Mar 3 at 11:59pm
- Points 5
- Questions 5
- Available Feb 2 at 12pm - Mar 3 at 11:59pm
- Time Limit None

Instructions

You have one attempt.

Questions might have more than one correct answer.

Attempt History

	Attempt	Time	Score
LATEST	**Attempt 1**	3 minutes	4 out of 5

ⓘ Correct answers will be available on Mar 4 at 12am.

Score for this quiz: 4 out of 5
Submitted Feb 29 at 8:55pm
This attempt took 3 minutes.

Question 1
1 / 1 pts

$$\dot{\vec{\theta}} = B^{-1}(\vec{\theta}) \cdot \vec{\omega}_{\mathcal{B}}^{\mathcal{B}/\mathcal{I}}$$

represents:

- Inverse rotational kinetics parametrized by Euler angles.
- Direct rotational kinematics parametrized by quaternions.
- Direct rotational kinetics parametrized by Euler angles.
- Inverse rotational kinematics parametrized by quaternions.
- Direct rotational kinetics parametrized by quaternions.
- Inverse rotational kinetics parametrized by quaternions.
- Direct rotational kinematics parametrized by Euler angles.
- Inverse rotational kinematics parametrized by Euler angles.

Question 2

1 / 1 pts

$$\dot{\hat{\boldsymbol{\beta}}} = \frac{1}{2} B(\hat{\boldsymbol{\beta}}) \cdot \vec{\boldsymbol{\omega}}_{\mathcal{B}}^{\mathcal{B}/\mathcal{I}}$$

represents:

- Inverse rotational kinetics parametrized by Euler angles.
- Direct rotational kinetics parametrized by quaternions.
- Direct rotational kinematics parametrized by quaternions.
- Direct rotational kinetics parametrized by Euler angles.
- Inverse rotational kinematics parametrized by Euler angles.
- Direct rotational kinematics parametrized by Euler angles.
- Inverse rotational kinematics parametrized by quaternions.
- Inverse rotational kinetics parametrized by quaternions.

Question 3

1 / 1 pts

$$\vec{\boldsymbol{\omega}}_{\mathcal{B}}^{\mathcal{B}/\mathcal{I}} = B(\vec{\boldsymbol{\theta}}) \cdot \dot{\vec{\boldsymbol{\theta}}}$$

represents:

- Direct rotational kinematics parametrized by Euler angles.
- Direct rotational kinetics parametrized by quaternions.
- Inverse rotational kinematics parametrized by quaternions.
- Inverse rotational kinetics parametrized by quaternions.
- Inverse rotational kinetics parametrized by Euler angles.
- Direct rotational kinetics parametrized by Euler angles.
- Inverse rotational kinematics parametrized by Euler angles.
- Direct rotational kinematics parametrized by quaternions.

Question 4

1 / 1 pts

$$\vec{\boldsymbol{\omega}}_{\mathcal{B}}^{\mathcal{B}/\mathcal{I}} = 2B^{T}(\hat{\boldsymbol{\beta}}) \cdot \dot{\hat{\boldsymbol{\beta}}}$$

represents:

- Direct rotational kinematics parametrized by Euler angles.
- Direct rotational kinematics parametrized by quaternions.
- Direct rotational kinetics parametrized by quaternions.
- Inverse rotational kinematics parametrized by quaternions.
- Direct rotational kinetics parametrized by Euler angles.
- Inverse rotational kinetics parametrized by quaternions.
- Inverse rotational kinematics parametrized by Euler angles.
- Inverse rotational kinetics parametrized by Euler angles.

IncorrectQuestion 5

0 / 1 pts

Consider the angular velocity of $\mathcal{B}$ with respect to $\mathcal{I}$ expressed in terms of Euler angles. The Euler angles rates can be determined from the angular velocity for any yaw-pitch-roll combination.

- True
- False

Quiz Score: 4 out of 5