Assignment 10

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-11-26, 23:59 IST.

1) Compute the principal moments of inertia for a homogenous thin rod of length $l$ of mass $M$. Neglect the thickness of the rod. Select the correct answer: 2 points

- $I_x = 0, I_y = I_z = \frac{1}{3} Mr^2$
- $I_x = 0, I_y = I_z = \frac{1}{4} Mr^2$
- $I_x = 0, I_y = I_z = \frac{1}{6} Mr^2$
- $I_x = 0, I_y = I_z = \frac{1}{12} Mr^2$

No, the answer is incorrect
Score: 0

Accepted Answers:
$I_x = 0, I_y = I_z = \frac{1}{12} Mr^2$

2) Compute the principal moments of inertia for a homogenous sphere of radius $R$ of mass $M$. Select the correct answer: 3 points

- $I_x = I_y = I_z = \frac{2}{5} Mr^2$
- $I_x = I_y = I_z = \frac{9}{5} Mr^2$
- $I_x = I_y = I_z = \frac{4}{5} Mr^2$
- $I_x = I_y = I_z = \frac{1}{3} Mr^2$

No, the answer is incorrect
Score: 0

Accepted Answers:
$I_x = I_y = I_z = \frac{1}{3} Mr^2$

3) Compute the principal moments of inertia for a homogenous circular cylinder of radius $R$ and height $h$ and mass $M$. Take $z$ along the axis of the cylinder. Select the correct answer: 4 points

- $I_x = I_y = \frac{1}{4} Mr^2, I_z = \frac{1}{2} Mr^2$
- $I_x = I_y = \frac{1}{4} Mr^2 + \frac{h^2}{3}, I_z = \frac{1}{2} Mr^2$
- $I_x = I_y = \frac{1}{4} Mr^2 + \frac{h^2}{3}, I_z = Mr^2$
- $I_x = I_y = \frac{1}{4} Mr^2, I_z = \frac{1}{2} Mr^2$

No, the answer is incorrect
Score: 0

Accepted Answers:
$I_x = I_y = \frac{1}{4} Mr^2 + \frac{h^2}{3}, I_z = \frac{1}{2} Mr^2$