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VU Answer

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Of the following situations, which one is impossible?

Answer (Please select your correct option)

☐ A body having velocity east and acceleration east

☐ A body having velocity east and acceleration west

☐ A body having constant velocity and variable acceleration

☐ A body having constant acceleration and variable velocity

Correct answer solved by hadi
Cell No:03228043306
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A plane traveling north at 200m/s turns and then travels south at 200m/s. The change in its velocity is:

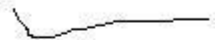
Answer (Please select your correct option)



400m/s north



400m/s south



zero



200m/s south

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The inertia of a body tends to cause the body to:



Answer (Please select your correct option)

☐ speed up

☐ slow down

☒ resist any change in its motion

☐ fall toward Earth

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A car travels east at constant velocity. The net force on the car is:

Answer (Please select your correct option)

☐

east

☐

west

☐

down

☐

zero

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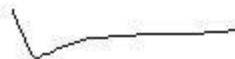
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A ball is thrown upward into the air with a speed that is greater than terminal speed. It lands at the place where it was thrown. During its flight the force of air resistance is the greatest:

Answer (Please select your correct option)

☐ just after it is thrown



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☐ halfway up

☐ at the top of its trajectory

☐ halfway down

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An object moves in a circle at constant speed. The work done by the centripetal force is zero because:

Answer (Please select your correct option)

☐ the displacement for each revolution is zero

☐ the average force for each revolution is zero

☐ there is no friction

☐ the centripetal force is perpendicular to the velocity

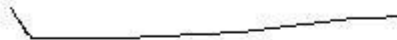


A 6.0-kg block is released from rest 80m above the ground. When it has fallen 60m its kinetic energy is approximately:

Answer (Please select your correct option)

☐ 4800 J

☐ 3500 J



☐ 1200 J

☐ 120 J

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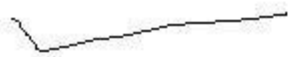


The momentum of an object at a given instant is independent of its:



Answer (Please select your correct option)

☐ acceleration



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☐ mass

☐ speed

☐ inertia



The center of mass of the system consisting of Earth, the Sun, and the planet Mars is:

Answer (Please select your correct option)

☐ closer to Earth than to either of the other bodies

☒ closer to the Sun than to either of the other bodies

☐ closer to Mars than to either of the other bodies

☐ at the geometric center of the triangle formed by the three bodies

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A net torque applied to a rigid object always tends to produce:

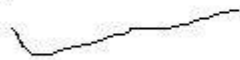


Answer (Please select your correct option)

☐ linear acceleration

☐ rotational equilibrium

☐ angular acceleration



☐ rotational inertia

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In simple harmonic motion, the restoring force must be proportional to the:

Answer (Please select your correct option)

☐ amplitude

☐ frequency

☐ velocity

☒ displacement

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A particle oscillating in simple harmonic motion is:

Answer (Please select your correct option)

☐ in equilibrium at the ends of its path because its velocity is zero there

☐ in equilibrium at the center of its path because the acceleration is zero there

☐ never in equilibrium because it is in motion

☐ never in equilibrium because there is always a force

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A 160-N child sits on a light swing and is pulled back and held with a horizontal force of 100 N. The magnitude of the tension force of each of the two supporting ropes is:

Answer (Please select your correct option)

60N



94N



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120N



190N





Young's modulus is a proportionality constant that relates the force per unit area applied perpendicularly at the surface of an object to:

Answer (Please select your correct option)

☐ the shear

☐ the fractional change in volume

☒ the fractional change in length

☐ the pressure

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Which of the following five statements, concerning the upper surface pressure of a liquid, is FALSE?

Answer (Please select your correct option)

- ☐ It is independent of the surface area
- ☐ It is the same for all points on that surface
- ☐ It would not increase if the liquid depth were increased
- ☐ It would increase if the liquid density were increased



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Whenever an object strikes a stationary object of equal mass:

Answer (Please select your correct option)



the two objects cannot stick together



the collision must be elastic



momentum is not necessarily conserved



none of these



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Which of the following properties of a sound wave determine its "pitch"?

Answer (Please select your correct option)

Amplitude



Distance from source to detector



Frequency



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Phase



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In the MKS system, charge is measured in

Answer (Please select your correct option)

Farad



Coulomb



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Henry



Tesla



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Like charges repel, unlike charges attract. This depends upon the

Answer (Please select your correct option)



strength of the two charges and the distance between them.



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strength of the two charges



distance between the two charges



none of these, given statement is irrelevant

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