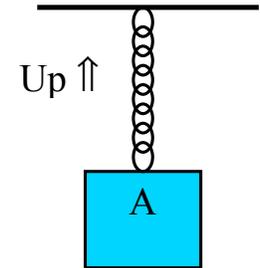


The sketch above shows the PE of an object as a function of position. Assume that the force generating this potential energy is the only force acting on the object. If a particle is moving around in x , at what point is the particle's speed a maximum?

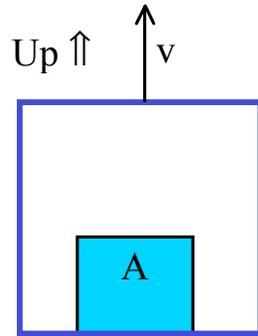
- 1) a
- 2) b
- 3) c
- 4) d
- 5) e
- 6) Impossible to answer without more information.

A block is attached to a spring. The block is released from rest. After falling a certain distance, the block will again stop momentarily. Where will the block stop?



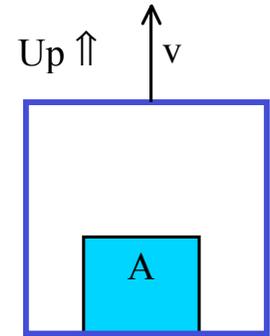
- 1) The block will stop where the force of gravity exactly matches the force of the spring.
- 2) The block will stop where the potential energy of the spring exactly matches the potential energy of gravity at that point.
- 3) The block will stop where the potential energy of the spring exactly matches the initial potential energy of gravity.
- 4) The block will stop where the sum of gravitational and spring potential energy exactly matches the sum when it was released.
- 5) More than one of the above.
- 6) None of the above.

A box is sitting on the floor of an elevator which is moving up at a constant speed, v . The box has mass M_A . Which of the following is true?



- 1) Kinetic energy is being converted into gravitational potential energy.
- 2) The normal force does work on the box, creating gravitational potential energy.
- 3) The cable pulling up the elevator does work on the box, creating gravitational potential energy.
- 4) The normal force must be larger than $M_A g$ in order to overcome gravity and create the upward energy.
- 5) The box has constant speed so its total mechanical energy is a constant.
- 6) More than one of the above.
- 7) None of the above.

You lift a ball at constant velocity from a height h to a greater height H . If you consider the ball to be the system, which of the following statements is true?



- 1) The potential energy of the system increases.
- 2) The kinetic energy of the system decreases.
- 3) The earth does negative work on the system.
- 4) You do negative work on the system.
- 5) Two of the above are true.
- 6) Three of the above are true.
- 7) All of the above are true.
- 8) None of the above are true.