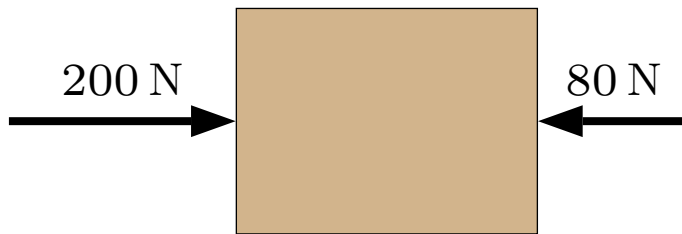


Question 1

A block, with mass 40 kg , is initially at rest on a horizontal frictionless surface. Then two people constantly push on it in opposite directions with forces as indicated.

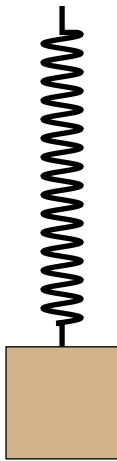


Which of the following is true during the entire period while the forces above are applied?

1. The block stays at rest.
2. The block always moves at a constant speed.
3. The block first speeds up and then reaches a constant speed.
4. The block constantly speeds up.

Question 2

A block is suspended from a spring. The block is at rest.

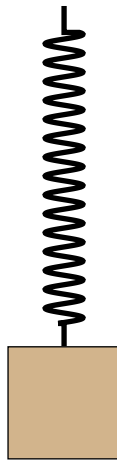


Which of the following is true?

1. The force exerted by the spring is larger than the force exerted by gravity.
2. The force exerted by the spring is smaller than the force exerted by gravity.
3. The force exerted by the spring is the same as the force exerted by gravity.

Question 3

A block is suspended from a spring. The block moves straight up with constant speed.



Which of the following is true?

1. The force exerted by the spring is larger than the force exerted by gravity.
2. The force exerted by the spring is smaller than the force exerted by gravity.
3. The force exerted by the spring is the same as the force exerted by gravity.

Question 4

A ball is thrown straight up, rises and then drops. Consider its motion after it leaves the hand and ignore air resistance.

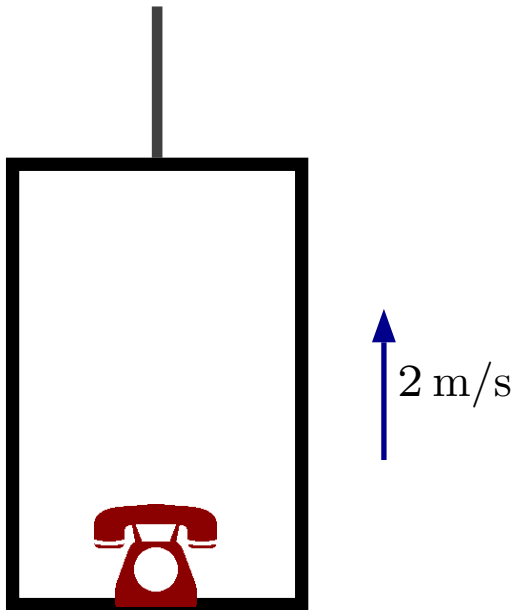
Which of the following is true?

1. The gravitational force exerted by the Earth on the ball is always the same.
2. The gravitational force exerted by the Earth is less while the ball moves up than when it moves down.
3. The gravitational force exerted by the Earth is more while the ball moves up than when it moves down.
4. The gravitational force is only exerted when the ball falls.
5. None of the above.

Phys 100 F23 Class 14

Question 5

A telephone, whose weight is 5 N rests on the surface of the floor of an elevator. During a certain period, the elevator moves with a constant *velocity* of 2 m/s upward.



Which of the following is true regarding the normal force exerted by the floor of the elevator on the phone?

1. Normal force is more than 5 N and points up.
2. Normal force is less than 5 N and points up.
3. Normal force is exactly 5 N and points up.
4. Normal force is exactly 5 N and points down.
5. Normal force is more than 5 N and points down.