

MCQ Practice Test 2

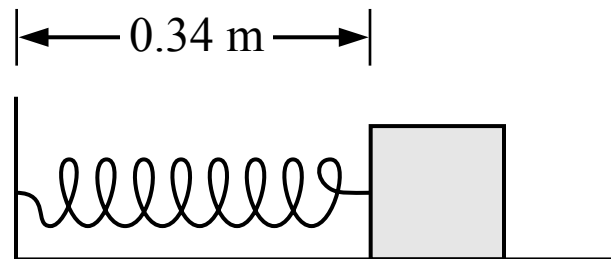
Section I: Multiple-Choice

Time: 85 minutes

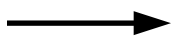
42 Questions

Note: To simplify calculations, you may use $g = 10 \text{ m/s}^2$ in all problems.

Directions: Each of the questions or incomplete statements below is followed by four suggested answers or completions. Select the one that is best in each case.



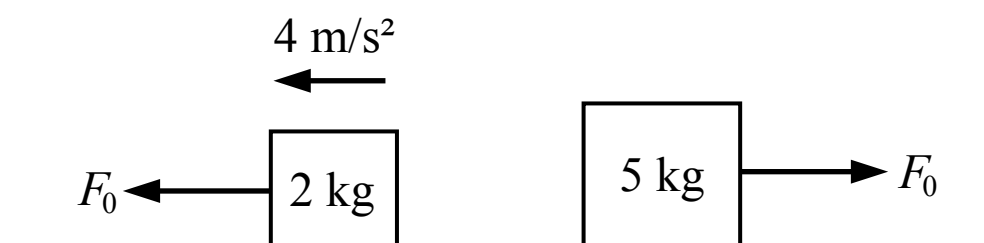
1. A block is attached to a spring which has an original unstretched length of 0.28 m. The other end of the spring is attached to a wall. The block is pulled away from the wall and released, and the block oscillates left and right. Which of the following shows the direction of the spring force acting on the block when it is in the position shown in the figure above?

(A) 

(B) 

(C) 

(D) The magnitude of the spring force is zero



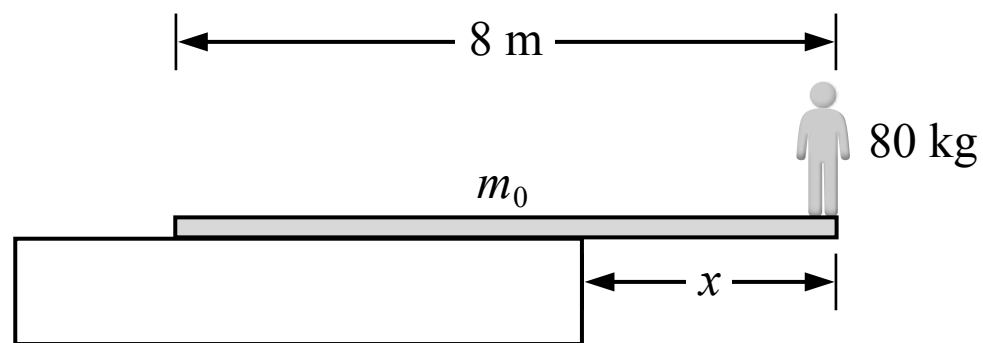
2. Two blocks are on a surface with negligible friction. A force with a magnitude of F_0 is applied to the 2 kg block and it accelerates at 4 m/s^2 . A force with the same magnitude of F_0 is applied to the 5 kg block. If the block starts at rest, what is the speed of the 5 kg block after 2 seconds?

(A) 1.6 m/s

(B) 3.2 m/s

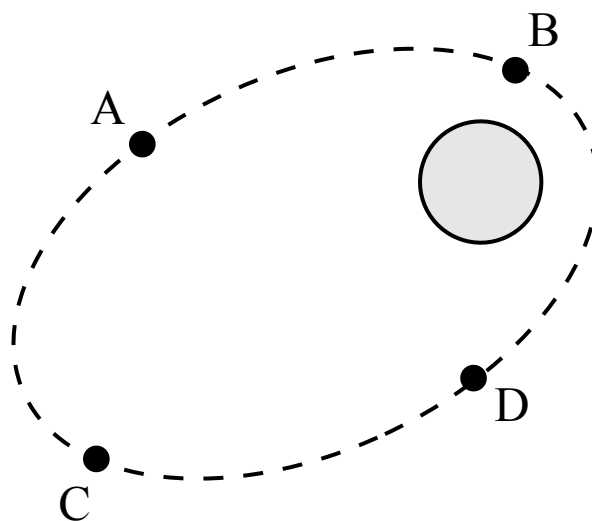
(C) 4.0 m/s

(D) 8.0 m/s



3. An 80 kg person stands at the end of an 8 m long beam with a mass of m_0 . The beam remains at rest on top of a large block as shown in the figure above. What is the maximum distance x that the beam can extend from the block without the beam rotating?

(A) 0 m
 (B) 1 m
 (C) 4 m
 (D) Cannot be determined



4. A satellite is orbiting a planet as shown in the figure above. At which of the points shown does the satellite have the greatest speed?

(A) Point A
 (B) Point B
 (C) Point C
 (D) Point D

