

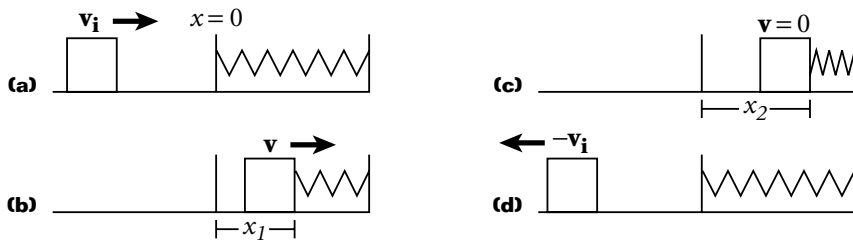
Section
5-2

HOLT PHYSICS

Diagram Skills

Energy

As shown in the diagram, a block with a mass of m slides on a frictionless, horizontal surface with a constant velocity of v_i . It then collides with a spring that has a spring constant of k . The block fully compresses the spring, comes to rest briefly, and then moves in the opposite direction with a velocity of $-v_i$.



1. Examine the situation shown in part (a) of the diagram.
 - a. What is the kinetic energy of the block? _____
 - b. What is the potential energy associated with the block's position? _____
 - c. What is the mechanical energy for this system? _____
2. Examine the situation shown in part (b) of the diagram.
 - a. What is the kinetic energy of the block? _____
 - b. What is the potential energy associated with the block's position? _____
 - c. What is the mechanical energy for this system? _____
3. Examine the situation shown in part (c) of the diagram.
 - a. What is the kinetic energy of the block? _____
 - b. What is the potential energy associated with the block's position? _____
 - c. What is the mechanical energy for this system? _____
4. Examine the situation shown in part (d) of the diagram.
 - a. What is the kinetic energy of the block? _____
 - b. What is the potential energy associated with the block's position? _____
 - c. What is the mechanical energy for this system? _____

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