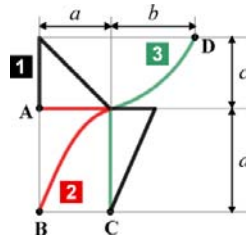


Chapter 8. Potential Energy and Conservative Forces

I. Conservative and Nonconservative Forces

1. What is the magnitude of work done by the gravitational force if a 1-kg body moves from point **B** to point **A** (points are randomized) along path **2**? Suppose that $a = 2$ m, $b = 3$ m, $c = 4$ m, and $d = 5$ m.

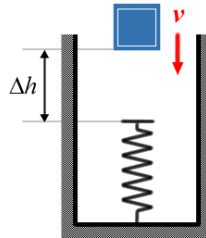


II. Potential Energy and the Work Done by Conservative Forces

1. Find the magnitude of the change of gravitational potential energy when a 2-kg body is thrown vertically upwards to 5 m above its initial height.

III. Conservation of Mechanical Energy

1. A block of mass $m = 2$ kg is released from a certain height and is falling toward an uncompressed spring. Find the compression of the spring if $\Delta h = 2$ m and the force constant of the spring is 400 N/m.



IV. Work Done by Nonconservative forces

1. Sliding on a rough surface, a 2-kg body decelerates from 10 m/s to 3 m/s. What is the work done by the frictional force?

V. Potential Energy Curves and Equipotentials

1. A moving 4-kg body generates the $U(x)$ graph shown below. Knowing that the body starts at rest, find its speed at point **A** (points are randomized!).

