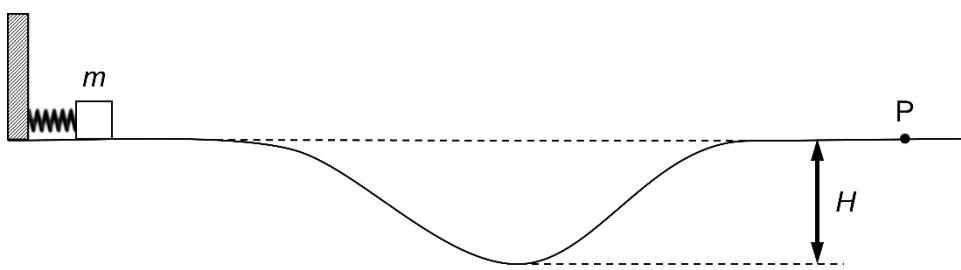


- 5 A small object of mass m is launched by a spring and travels along a rough track to a point P as shown.



The spring constant of the spring is k and its initial compression is x .

As it travels to P, it goes through a distance d and a dip of depth H . The object experiences a constant frictional force f for the entire motion.

What is the kinetic energy of the object at point P?

A $\frac{1}{2}kx^2 - fd$

B $\frac{1}{2}kx^2 - fd - mgH$

C $\frac{1}{2}kx^2 + fd$

D $\frac{1}{2}kx^2 + fd + mgH$