Answer on Question #50657, Physics, Mechanics | Kinematics | Dynamics |

Question

If a ball is fall on ground from a table , then the work done by gravitational force= mgh.? when any agent do this it becomes= (-mgh). why it is negative here? please explain

Answer

The done by gravitational force is equal to the change of potential energy.

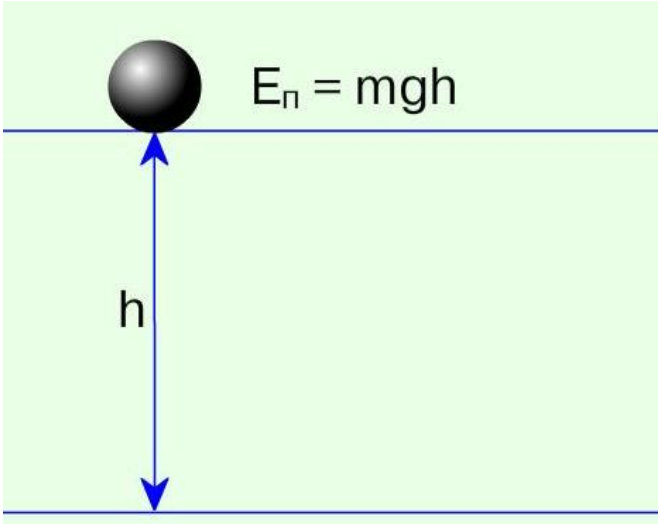

Fig.1

If a ball is fall on ground from a table (see *Fig.1*) the change of potential energy is given by Eq.(1)

$$\Delta E = mgh - 0 = mgh \tag{1}$$

where m is the mass of ball; h is the height of the table; $g = 9.8 m/s^2$ gravitational acceleration.

If a ball move from ground to a table the change of potential energy is given by Eq.(2)

$$\Delta E = 0 - mgh = -mgh \tag{2}$$