

Answer on Question #48655 – Physics - Mechanics | Kinematics | Dynamics

if a body is displaced through height h , workdone will be $-mgh$.but when we see in interconversion of energy it take $P.E=mgh$

Solution:

Work done by the our force is negative in this case. This is the case where the **force opposes the motion** (body is attracted towards the centre of earth due to force of gravity), we apply force to move the body to the height h .

$$W = -mg \cdot h$$

But the potential energy is always positive because there is a height h above the initial level:

$$P.E. = mgh_{initial}$$

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