

Question#21031

A 60 kilogram student climbs a ladder a vertical distance of 4.0 meters in 8.0 seconds. Approximately how much total work is done against gravity by the student during the climb?

Solution:

The work done against gravity is equal to the changing of potential energy:

$$A = \Delta E_p = mg\Delta H$$

$$A = 60 * 9.8 * 4 = 2352 J$$

**Answer: 2352 J**