

Answer on Question #42231 – Physics – Acoustics

Mr Aslam has a mass of 80 kilograms. His apartment is on the second floor, 600cm up from ground level. How much work does he do against gravity each time he climbs the stairs to his apartment?

Solution:

$m = 80 \text{ kg}$ – mass of Mr Aslam;

$h = 600\text{cm} = 6\text{m}$ – height of the second floor up from the ground level;

Work done by Mr Aslam is equal to change of his potential energy with respect to the ground level:

$$W = mgh = 80 \text{ kg} \cdot 9.8 \frac{\text{m}}{\text{s}^2} \cdot 6\text{m} = 4704 \text{ J}$$

Answer: work done by Mr Aslm is equal to 4704 J.