

A weightlifter lifts a set of weights a vertical distance of 2.00 m. If a constant net force of 350 N is exerted on the weights, what is the net work done on the weights?

Solution:

$d = 2.00\text{m}$ – vertical distance;

$F = 250\text{N}$ – net force;

The work done by a constant force of magnitude F on a point that moves a displacement d in the direction of the force is the product

$$W = F \cdot d = 2\text{m} \cdot 250\text{N} = 500\text{J}$$

Answer: net work done on the weights is 500J.