Answer on Question #43942 – Physics – Other

Kyle pushes a 50kg sack of rice across a level of floor by a horizontal force of 35.0 N against the frictional force of 12.0 N.He succeeded in moving the sack a distance of 5.0 m. How much work is done?

Solution:
$m = 50kg -$ mass of the sack of rice;
$F = 35N -$ horizontal force;
$F_{frict} = 12N -$ frictional force;
$d = 5m -$ travelled distance;
$W -$ work done;

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
$$W = F \cdot d = 35N \cdot 5m = 175 \, J$$

Answer: work done by Kyle is equal to 175 J.