Answer on Question#39371 – Physics - Other

A glass with a mass of 0.472 kg is dropped and has a speed of 2.7 m/s when it suddenly hits the hard dining room floor. Calculate the impulse force

Solution:
The impulse of force can be extracted and found to be equal to the change in momentum of an object provided the mass is constant:
$$\text{Impulse} = \text{F}\Delta\text{t} = \text{m}\Delta\text{v} = 0.472\text{kg} \cdot 2.7\frac{\text{m}}{\text{s}} = 1.27\text{ kg}\frac{\text{m}}{\text{s}}$$
Answer: impulse of force is equal to $1.27\text{ kg}\frac{\text{m}}{\text{s}}$.