

Answer on Question 49854, Physics, Mechanics | Kinematics | Dynamics

Question:

A ball of mass $1g$ is subjected for millisecond to a force of $10^{-3}N$. How much does the velocity change?

Solution:

By the definition of the impulse we have:

$$\bar{F} \Delta t = m \Delta v.$$

From this formula we can obtain the velocity change:

$$\Delta v = \frac{\bar{F} \Delta t}{m} = \frac{10^{-3} N \cdot 10^{-3} s}{10^{-3} kg} = 10^{-3} \frac{m}{s}.$$

Answer:

$$\Delta v = 10^{-3} \frac{m}{s}.$$