Which of these is the correct definition for momentum and its unit?

	definition	unit
A	$p = m \div v$	N/m
B	$v = p \times m$	kgm/s
C	$v = p \div m$	kgm/s
D	$p = m \times v$	N/kg

Complete the following sentence:

Impulse is equal to...

A Momentum

B Velocity multiplied by time

C A corresponding change in momentum

D Force multiplied by the distance it acts

A rollercoaster speeds along a track with considerable momentum.

If a different rollercoaster travels at four times the speed but has half as much mass, its momentum is would be:

A Zero

B Twice as much

C Four times as much

D Unchanged

LIVEWORKSHEETS

Padded dashboards in cars are safer in an accident than non-padded ones because a passenger hitting the dashboard would experience

A Lengthened time of contact

B Shorter time of contact

C Decreased impulse

D Increased momentum

After a car crash the car driver's airbag inflates. The airbag then deflates when it is hit by the driver's head.

How does an airbag reduce the risk of injury?

A Collision time increases, which increases the rate of change of momentum.

B Collision time increases, which reduces the rate of change of momentum.

C Collision time decreases, which increases the rate of change of momentum.

D Collision time decreases, which reduces the rate of change of momentum.

An object of mass 150 kg accelerates from a velocity of 5 m/s to a velocity of 10 m/s in the same direction.

What is the impulse provided to cause this acceleration?

A 750 Ns

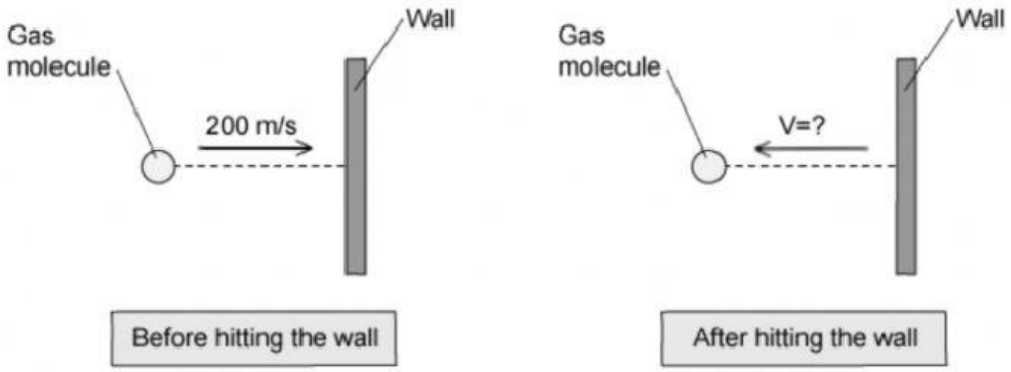
B 1500 Ns

C 2250 Ns

D 7500 Ns

LIVEWORKSHEETS

A gas molecule strikes the wall of a container with a speed of 200m/s. It rebounds with the same kinetic energy as it had before striking the wall.



What is its final velocity?

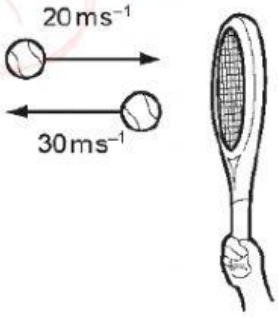
A 100 m/s

B - 100 m/s

C 200 m/s

D - 200 m/s

A tennis ball of mass 100 g is struck by a tennis racket. The velocity of the ball is changed as shown.

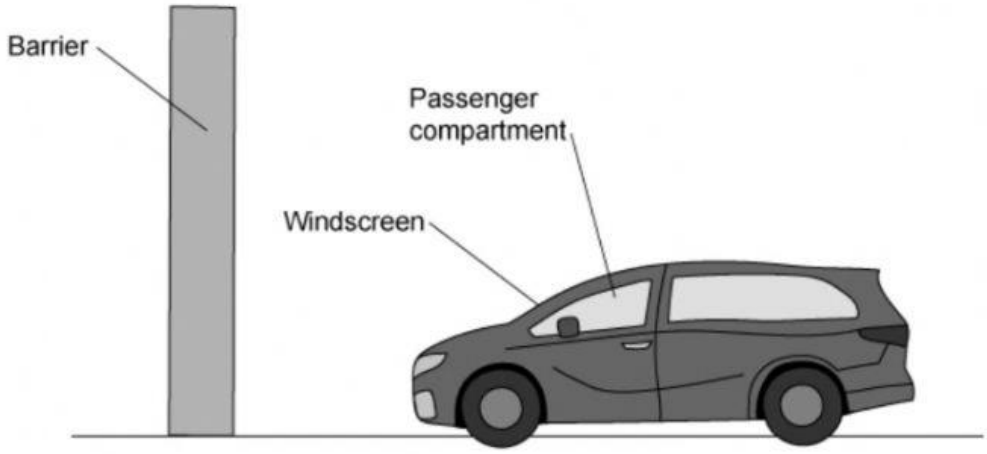


What is the magnitude of the change in momentum of the ball?

A $1\,kg\,ms^{-1}$ **B** $5\,kg\,ms^{-1}$ **C** $1000\,kg\,ms^{-1}$ **D** $5000\,kg\,ms^{-1}$

LIVEWORKSHEETS

A passenger of mass 90 kg is involved in a minor car crash.



The car approaches a solid barrier at 32 m/s. It crashes into the barrer and stops in 0.2s.

Determine the impulse that must be applied to the car to bring it to rest.

A 2.8 Ns

B 14 Ns

C 580 Ns

D 2900 Ns

During a paintball fight, a paint pellet of mass 150g hits a stationary target with a speed of 220m/s. It takes 0.025s from the moment the pellet comes into contact with the wall until it flattens onto the wall.

What is the force exerted as a result of the paintball "splat"?

A 1.3×10^3 N

B 33 N

C 1.3×10^6 N

D 33×10^3 N

LIVEWORKSHEETS