

PQ 7

Questions

Q1

Calculate the final velocity of a car that accelerates at 2ms^{-2} from an initial velocity of 3ms^{-1} for 5 seconds.

Q2

Calculate the stopping distance of a car that is decelerated at 2.5 ms^{-2} from an initial velocity of 20 ms^{-1} .

Q3

A stone is dropped from the edge of a cliff. If it accelerates downwards at 9.81 ms^{-2} and reaches the bottom after 1.5s calculate the height of the cliff.

Q4

Calculate the time taken for a car to accelerate uniformly from 5 ms^{-1} to 12 ms^{-1} over a distance of 30m.

Q5

A ball is thrown upwards against gravity with an initial speed of 8 ms^{-1} . What is the maximum height reached by the ball?

Q6

Calculate the momentum of a rugby player, mass 120kg moving at 3m/s.

Q7

Calculate the mass of a car that when moving at 25m/s has a momentum of 20 000 kg m/s.

Q8

Calculate the force required to change the momentum of a car by 24000 kgm/s over a 6 second period.

Q9

Calculate the time taken for a force of 6000N to cause the momentum of truck to change by 42000 kgm/s.

Q10

- A truck has a mass of 10 000 kg and a velocity of 3 m.s⁻¹.
What is its momentum?