Dear students (IXC) Science(Physics))
Teacher : BIPLAB DAS
Good morning .

Study materials for today (27th May, 2020) .

We have finished our second chaper Force and Laws of Motion and Exercises . Revise the full chaper again thoroughly and do the Additional Exercises (Page 130) .

Home work will be uploaded by tomorrow 8 pm (Thursday, 28th May) .

That's all for today . Thanks . 12:26 am ✓

Additional Exercises

A1. The following is the distance-time table of an object in motion:

Time in seconds	Distance in metres
0	0
1	1
2	8
3	27
4	64
5	125
6	216
7	343

(a) What conclusion can you draw about the acceleration? Is it constant, increasing, decreasing, or zero?

(b) What do you infer about the forces acting on the object?

A2. Two persons manage to push a motorcar of mass 1200 kg at a uniform velocity along a level road. The same motorcar can be pushed by three persons to produce an acceleration of 0.2 m s^{-2}. With what force does each person push the motorcar? (Assume that all persons push the motorcar with the same muscular effort.)

A3. A hammer of mass 500 g, moving at 50 m s^{-1}, strikes a nail. The nail stops the hammer in a very short time of 0.01 s. What is the force of the nail on the hammer?

A4. A motorcar of mass 1200 kg is moving along a straight line with a uniform velocity of 90 km/h. Its velocity is slowed down to 18 km/h in 4 s by an unbalanced external force. Calculate the acceleration and change in momentum. Also calculate the magnitude of the force required.

A5. A large truck and a car, both moving with a velocity of magnitude v, have a head-on collision and both of them come to a halt after that. If the collision lasts for 1 s:

(a) Which vehicle experiences the greater force of impact?

(b) Which vehicle experiences the greater change in momentum?

(c) Which vehicle experiences the greater acceleration?

(d) Why is the car likely to suffer more damage than the truck?