

Chapter 9

FORCE AND LAWS OF MOTION

First Law of Motion:

Newton & Galileo are the two scientists who have contributed for motion of objects.

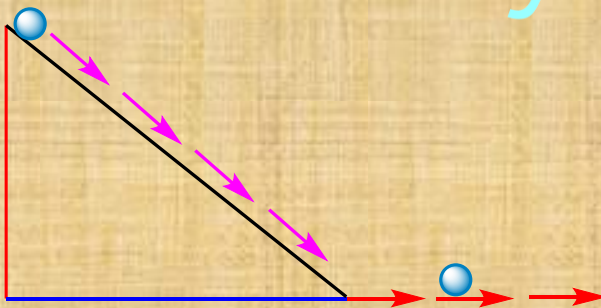
According to Newton,

The motion of a body is governed by three popular laws called Newton's laws of motion.

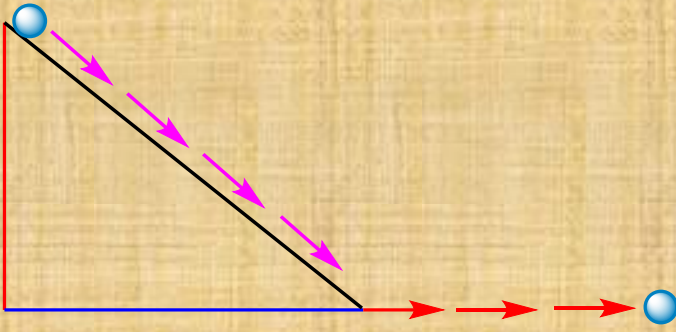
First Law:

“Every body continues to be in its state of rest or uniform motion unless it is compelled by some external force”.

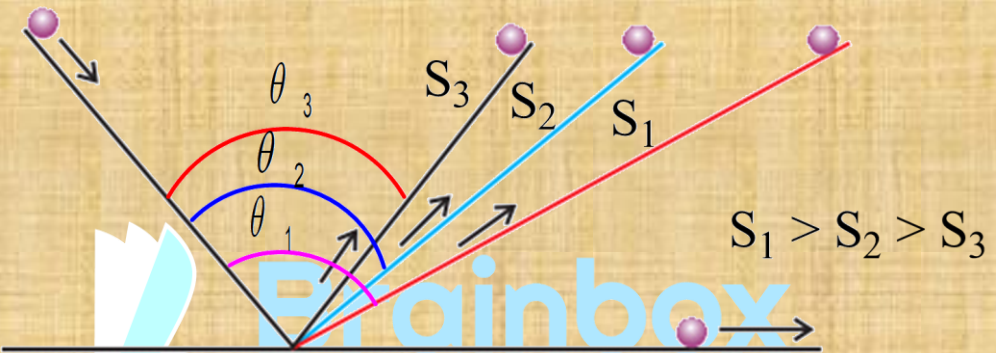
Ex. When a marble is allowed to slide on an inclined plane it continues to move as long as no force opposes.



But it gets stopped after travelling some distance because frictional forces opposing its motion.



Similarly consider following example,



Importance of I law is that, it defines two physical quantities.

(1) Inertia

(2) Force

Inertia:

“It is an inherent property of an object to remain in its state of rest or uniform motion”.

Mass is the measure of inertia:

This can be proved by following example.

(1) When a ball of some size is kicked you will get hurt, because of its mass it has greater inertia.

(2) A book shelf without books it can be moved easily, whereas when it is filled with books it is tough to move, because inertia is more because of mass.

Inertia is of 3 types.

(1) Inertial of rest

(2) Inertia of motion

(3) Inertial of direction

