

Motion in 1D (One - Dimension)

Motion along a straight line.

Quantities of Interest.

x : position

- $x(t)$
[x as a function of t]
- ↳ indicates the location of an object on an x -axis.
 - ↳ typically considered as a dependent variable
 - ↳ position is measured relative to some origin

* t : time

- ↳ label of when a specific event occurs
- ↳ typically considered as an independent variable
- ↳ time is measured relative to some origin

We try to measure the time elapsed from some beginning point. The most convenient choice is zero, but it doesn't have to be.

There is a nice way to describe motion:

Sequence Photography.

In sequence photography, a single photo is created from the superposition of a bunch of photos of some moving subject. Ideally, the photos are taken at regular intervals, from which we can then gain a lot of insight into the motion itself. Suppose we look at a marble traveling on a straight track, and take pictures of it every second in different circumstances.

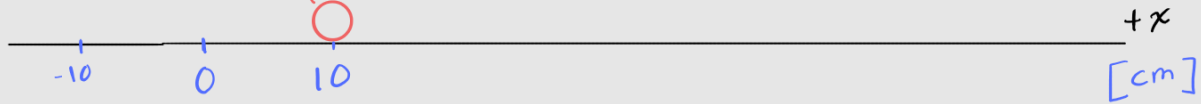
Work on the details by example.

I: The marble is at rest on the track.

South
←

$t = 0, 1s, 2s, \dots$

not moving relative to track.
North
→



$t[s]$	$x[cm]$
0	+10
1	+10
2	+10
3	+10
⋮	

We use to plot $x(t)$

