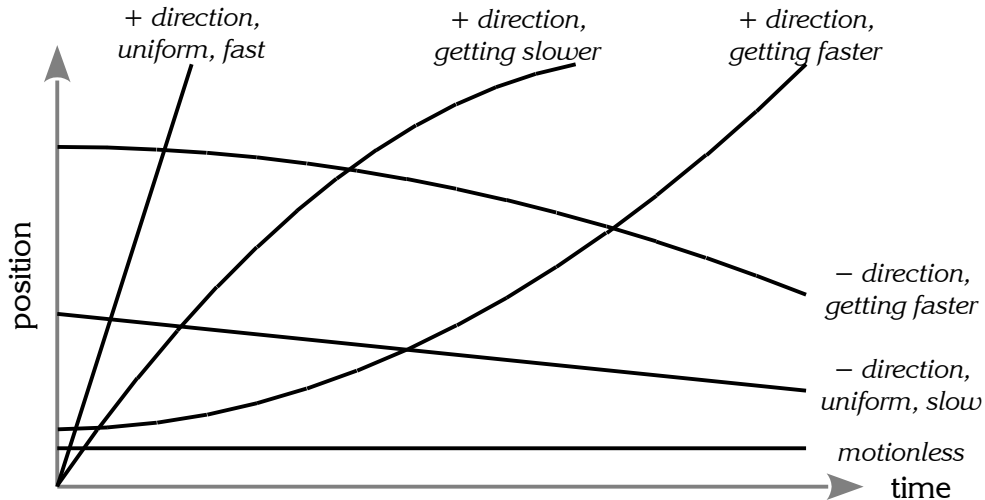


Physics Reference: Motion Graphs

A **position graph** shows where an object is at different times. The slope of the graph at any time shows the object's velocity at that instant. Therefore:

- steeper lines show faster objects
- horizontal lines show motionless objects
- lines with + slope are moving in the + direction
- lines with - slope are moving in the - direction
- straight lines show constant velocity (uniform motion)
- curved lines show changing velocity (accelerated motion)



A **velocity graph** shows an object's instantaneous velocity at different times. The slope of the graph at any time shows the object's acceleration at that instant. Therefore:

- steeper lines show stronger acceleration
- horizontal lines show constant velocity (uniform motion)
- slanted lines show changing velocity (accelerated motion)
- a line moving toward zero velocity means the object is slowing down
- a line moving away from zero velocity means the object is speeding up

