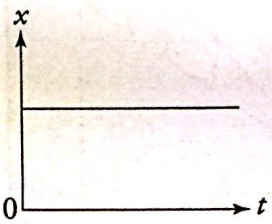
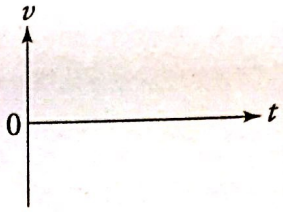
QUALITATIVE GRAPHING

Beyond all the math, you are at a clear advantage when you start to recognize that position-versus-time and velocity-versus-time graphs have a few basic shapes, and that all the graphs you will see will be some form of these basic shapes. Having a feel for these building blocks will go a long way toward understanding kinematics graphs in physics.

Either of the following two graphs represents something that is not moving.

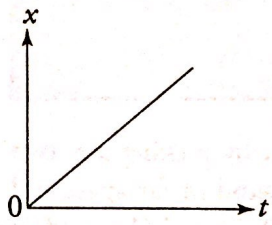


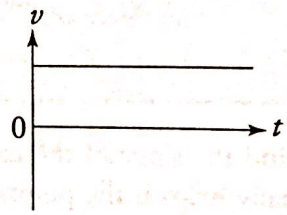


- no change in position
- zero velocity
- zero acceleration

Either of the following two graphs represents an object moving at a constant velocity in the positive direction.

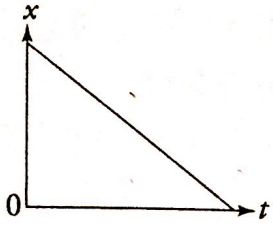
Know These Graphs
Familiarize yourself with these graphs so that you can quickly look at any graph and have a sense of what's going on as far as change in position, velocity, and acceleration immediately.

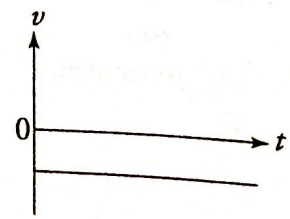




- positive change in position
- constant velocity
- zero acceleration

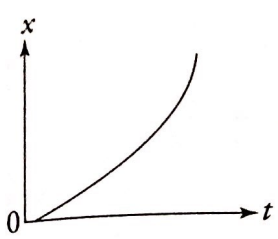
Either of the following two graphs represents an object moving at a constant velocity in the negative direction.

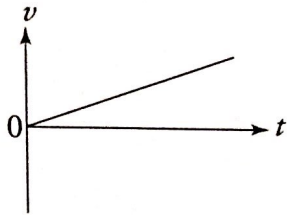




- negative change in position
- constant velocity
- zero acceleration

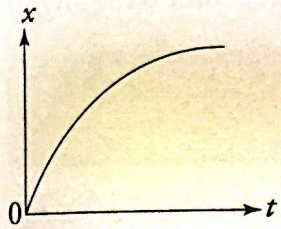
Either of the following two graphs represents an object speeding up in the positive direction.

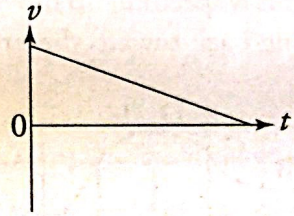




- positive change in position
- increasing velocity
- positive acceleration

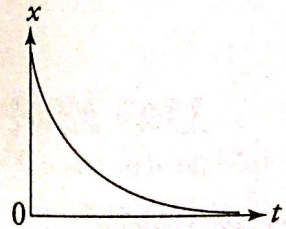
Either of the following two graphs represents an object slowing down in the positive direction.

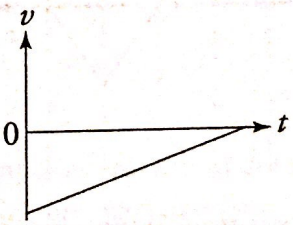




- positive change in position
- decreasing positive velocity
- negative acceleration

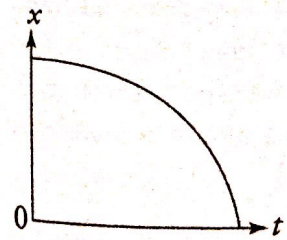
Either of the following two graphs represents an object slowing down in the negative direction.

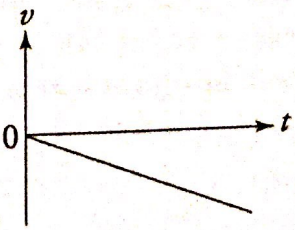




- positive change in position
- decreasing negative velocity
- positive acceleration

Either of the following two graphs represents an object speeding up in the negative direction.





- negative change in position
- increasing negative velocity
- negative acceleration