

Physics Homework -- Graphs of Motion

Mr. Coté

Graph the required graphs on a separate piece of paper. Be sure that your vel- and accel-vs-time graphs show whether velocity and/or acceleration is positive or negative.

Section 1 – 1D Horizontal Motion

1. A block slides with constant velocity to the right on a horizontal, frictionless surface. Graph the pos-, vel-, and accel-vs-time graphs in the x direction.
2. A block starts with an initial velocity to the right on a horizontal surface, but, because of friction, slows to a stop. Graph the pos-, vel-, and accel-vs-time graphs in the x direction.
3. A block slides with constant velocity to the left on a horizontal, frictionless surface. Graph the pos-, vel-, and accel-vs-time graphs in the x direction.
4. A block starts with an initial velocity to the left on a horizontal surface, but, because of friction, slows to a stop. Graph the pos-, vel-, and accel-vs-time graphs in the x direction.
5. A car starts from rest, and moves to the right with increasing speed. Graph the pos-, vel-, and accel-vs-time graphs in the x direction.
6. A car starts from rest, and moves to the left with increasing speed. Graph the pos-, vel-, and accel-vs-time graphs in the x direction.

Section 2 – 1D Vertical Motion

7. A ball falls from rest *without* air resistance. Graph the pos-, vel-, and accel-vs-time graphs in the y direction.
8. A ball is thrown straight *up* with some initial velocity. Graph the pos-, vel-, and accel-vs-time graphs in the y direction until the ball comes back down to its original height.