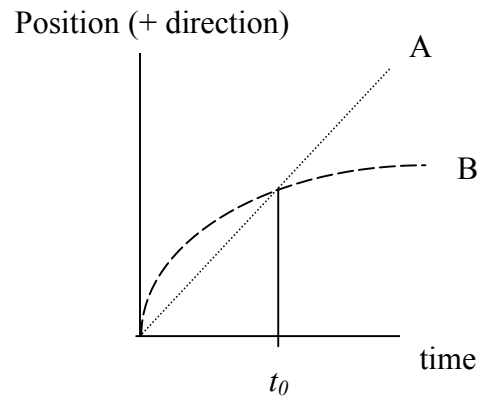


Conceptual Exercises 1

- If you drop an object in the absence of air resistance, it accelerates downward at 9.8 m/sec^2 . If instead you throw it downward, its downward acceleration after release is:
 - less than 9.8 m/sec^2
 - 9.8 m/sec^2
 - more than 9.8 m/sec^2
- You throw a ball straight up into the air. At its highest point the ball's:
 - velocity and acceleration are zero
 - velocity is nonzero but its acceleration is zero
 - velocity is zero but its acceleration is nonzero
- A person standing at the edge of a cliff throws one ball straight up and another ball straight down at the same initial speed. Neglecting air resistance, the ball to hit the ground below the cliff with the greater speed is the one initially thrown:
 - upward
 - downward
 - neither – they both hit at the same speed

The next two problems deal with a graph showing position as a function of time for two trains, labeled "A" and "B", running on parallel tracks:



- Train "B" has an acceleration that is always:
 - positive
 - zero
 - negative
- At time t_0 , both trains:
 - have the same velocity, position and acceleration
 - have the same position but different velocities and accelerations
 - have the same position and velocity, but different accelerations