Chapter 2

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- The following five equations describe the motion of a particle with constant acceleration, and don't work anywhere else:
  - $v = v_0 + at$
  - $x - x_0 = v_0 t + \frac{1}{2}at^2$
  - $v^2 = v_0^2 + 2a(x - x_0)$
  - $x - x_0 = \frac{1}{2}(v_0 + v)t$
  - $x - x_0 = vt - \frac{1}{2}at^2$
- For a particle in free flight (for which we assume no air resistance) there is a constant downward acceleration with a magnitude g that we take to be $9.8 m/s^2$.