Dimensional Analysis

1. $\frac{\Delta x \, v}{a}$ → displacement, so meters.
   → velocity, so m/s
   → acceleration, so m/s^2

$\Delta x \rightarrow [m]$

$v \rightarrow [m/s]$

$a \rightarrow [m/s^2]$

$$\frac{m \times \frac{m}{s}}{\frac{m}{s^2}} = m \times \frac{m}{s} \times \frac{s^2}{m} = [m \cdot s]$$

2. $v\,t$ → time, so seconds.
   → velocity, so m/s

$\frac{m}{s} \cdot s \rightarrow [m]$ Velocity times time is a distance! that makes sense!

3. $v = v_0 + at$

velocity $[m/s]$, velocity $[m/s]$, acceleration $[m/s^2]$, time $[s]$

$\left[\frac{m}{s}\right] = \left[\frac{m}{s}\right] + \left[\frac{m}{s^2} \cdot s\right]$

$\left[\frac{m}{s}\right] = \left[\frac{m}{s}\right] + \left[\frac{m}{s}\right]$ → Can add/subtract parts of equation with same units.

Both sides are m/s!