2.4: Further motion concepts

Momentum

- depends upon mass and velocity
- vector
- conserved when there is no external resultant force
- momentum = mass × velocity; p = mv
- force = $\frac{\text{change in momentum}}{\text{time}}$ time

Equations used to model the motion of objects

- v = u + at
- $x = \frac{u+v}{2}t$
- $v = \sqrt{u^2 + 2ax}$
- $x = ut + \frac{at^2}{2}$

The Principle of Moments

- Principle of Moments
 The sum of clockwise moments around a to the sum of anticlockwise moments around the same control moments around the same with
- limited to situations involving a pivot and parale forces (such as a balanced metre rule) DPP P

Moments

- the turning effects of a force around a fixed point (a pivot)
- moment of force (in Nm) = force (in N) × perpendicular distance (in m); $M = F \times d$
- e.g. a spanner being used to undo a nut