Chapter 5: Acceleration Calculations

$$\text{acceleration} = \frac{\text{change in velocity}}{\text{time taken}} \quad \text{or} \quad a = \frac{\Delta v}{\Delta t}$$

$$\text{acceleration} = \frac{\text{final velocity- initial velocity}}{\text{time taken}} \quad \text{or} \quad a = \frac{v-u}{t}$$

1. Rearrange $a = \frac{\Delta v}{\Delta t}$ to give an equation for the change in velocity Δv
2. Rearrange $a = \frac{\Delta v}{\Delta t}$ to give an equation for the time Δt
3. Rearrange $a = \frac{v-u}{t}$ to give an equation for the final velocity v
4. Rearrange $a = \frac{v-u}{t}$ to give an equation for the time t
5. If a car has an increase in velocity of 20 m/s in 8s what is its acceleration?
6. If a bike accelerates at 2 m/s^2 for 6s what will its change in velocity be?
7. A car travels at 20 m/s and then accelerates at $3m/s^2$ for 5s. What is its final speed?
8. A train travelling at 30m/s applies its breaks and slows to 10m/s in 40s. Calculate its acceleration.