**What equations do I need to know for the AQA GCSE physics exam for the Forces topic?**

| Equations to Learn | |
|---|---|
| pressure $= \dfrac{\text{force}}{\text{area}}$ | $p = \dfrac{F}{A}$ |
| weight $=$ mass $\times$ gravitational field strength | $W = m \times g$ |
| work done $=$ force $\times$ distance ( moved along line of action of force) | $W = F \times s$ |
| force $=$ Spring constant x extension | $F = k \times e$ |
| moment of a Force $=$ Force $\times$ distance | $M = F \times d$ |
| resultant force $=$ mass $\times$ acceleration | $F = m \times a$ |
| distance travelled $=$ speed $\times$ time | $s = v \times t$ |
| acceleration $= \dfrac{\text{change in velocity}}{\text{time taken}}$ | $a = \dfrac{\Delta v}{t}$ |
| **momentum $=$ mass $\times$ velocity** | $\mathbf{p = m \times v}$ |
| **Equations given in exam** | |
| elastic potential energy $= 0.5 \times$ mass $\times$ (extension)$^2$ | $E_e = 0.5 \times m \times e^2$ |
| pressure $\times$ volume $=$ constant | $p \times V =$ constant |
| **pressure difference $=$ height $\times$ density $\times$ g** | $\mathbf{p = h \times \rho \times g}$ |
| (Final speed)$^2$ - (initial speed)$^2 = +$ (2 x acceleration x distance) | $v^2 - u^2 = (2 \times a \times s)$ |
| **$F = \dfrac{\text{change in momentum}}{\text{change in time}}$** | $\mathbf{F = \dfrac{m\Delta v}{t}}$ |

Equations in bold type are Higher Tier only.