



What equations do I need to know for the Edexcel IGCSE physics exam for the Forces and Motion topics?

In the list below the equations are grouped into the ones that need learning for IGCSE Edexcel double award (4SD0) and Physics only specification (8463). The bold type equations are Paper 2 only.

Some of the equations at the end do not need to be learnt but will be given on an insert in the paper. These equations are at the end of the list. There is an equation highlighted in red that is not in the specification but helps to understand some important concepts. The equation list required for OCR, CIE, AQA trilogy and combined science are almost if not identical. The Eduqas specification requires more use of Newton's equations of motion sometimes called the SUVAT equations.

Equations to Learn	
average speed = $\frac{\text{distance moved}}{\text{time taken}}$	
acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{(v - u)}{t}$
force = mass \times acceleration	$F = m \times a$
weight = mass \times gravitational field strength	$W = m \times g$
moment = force \times perpendicular distance from the pivot	$M = F \times d$
Stopping distance = braking distance + thinking distance	
Force = Spring constant \times extension	$F = kx$
momentum = mass \times velocity	$p = m \times v$
Equations given in exam	
$F = \frac{\text{change in momentum}}{\text{change in time}}$	$F = \frac{mv - mu}{t}$
(Final speed) ² = (initial speed) ² + (2 \times acceleration \times distance)	$v^2 = u^2 + (2 \times a \times s)$