Edexcel Physics – 9PH0

Module 6: Further Mechanics

You should be able to demonstrate and show your understanding of:	Progress and understanding:			
	1	2	3	4
Further Mechanics				
How to use the equation: $$Impulse = F\Delta t = \Delta p$$				
CORE PRACTICAL 9: Investigate the relationship between the force exerted on an object and its change in momentum				
How to apply conservation of linear momentum to problems in two dimensions				
CORE PRACTICAL 10: Use ICT to analyse collisions between small spheres, e.g. ball bearings on a table top				
How to determine whether a collision is elastic or inelastic				
How to derive and use the equation: $$E_k = \frac{p^2}{2m}$$ for kinetic energy of a non-relativistic particle				
Angular displacement in radians and degrees and how to convert between these units using the equations: $$Degrees \rightarrow Radians: Degrees \times \frac{\pi}{180}$$ $$Radians \rightarrow Degrees: Radians \times \frac{180}{\pi}$$				
Angular velocity and how to use the equations: $$v = \omega r \text{ and } T = \frac{2\pi}{\omega}$$				
Vector diagrams to derive equations for centripetal acceleration: $$a = \frac{v^2}{r} = r\omega^2$$				

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	1	2	3	4
Resultant force (*centripetal force)* and that it is required to produce and maintain circular motion				
The equations for centripetal force: $$F = ma = \frac{mv^2}{r} = mr\omega^2$$				