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| **Before** | **Objectives** | **After** |
|  | **73 Use** the expression *p = mv* |  |
|  | **74 Investigate** and **apply** the principle of conservation of linear momentum to problems in **one dimension** |  |
|  | **75 Investigate** and **relate** net force to rate of change of momentum in situations where mass is constant (Newton’s second law of motion) |  |
|  | **76 Derive** and **use** the expression *Ek* = *p2/2m* for the kinetic energy of a non-relativistic particle) |  |
|  | **77 Analyse** and **interpret** data to calculate the momentum of (non-relativistic) particles and apply the principle of conservation of linear momentum to problems in **one** and **two dimensions**. |  |
|  | **78 Explain** and **use** the principle of conservation of energy, and **determine** whether a collision is elastic or inelastic. |  |
|  | **79 Express** angular displacement in radians and in degrees, and convert between those units. |  |
|  | **80 Explain** the concept of angular velocity, and **use** the relationships *v* = ω*r* and *T* = *2*π*/*ω. |  |
|  | **81 Explain** that a resultant force (centripetal force) is required to produce and maintain circular motion. |  |
|  | **82 Use** the expression for centripetal force *F* = *ma* = *mv2/r* and hence **derive** and **use** the expressions for centripetal acceleration *a* = *v2/r* and *a* = *r*ω*2*. |  |