

Topic 5: Work, Energy, Power

1) Formulae:

<p>a) Work:</p> <ul style="list-style-type: none">Units: Joules $Work = Force \times Distance$ <p>b) Power:</p> <ul style="list-style-type: none">Units: Watts $Power = Force \times Velocity$ $Power = \frac{Work}{Time}$ <p>c) Impulse:</p> <ul style="list-style-type: none">Units: Newton Seconds $\vec{I} = m\vec{v} - m\vec{u}$	<p>d) Potential/Kinetic Energy:</p> <ul style="list-style-type: none">Units: Joules $KE = \frac{1}{2}mv^2$ $PE = mgh$ <p>e) Law of Conservation of Energy:</p> $\frac{1}{2}mv^2 + mgh = Constant$ <p>f) Law of Conservation of Momentum:</p> $m_1u_1 + m_2u_2 = m_1v_1 + m_2v_2$
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2) Drag Forces:

<p>Notes:</p> <ul style="list-style-type: none">➤ Drag Forces can be modelled using: $Drag (D) = kv^n$ <ul style="list-style-type: none">➤ At Max Speed => Acceleration = 0	
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