

Honors Physics Equation Sheet

Work-Energy:

- $W = F \Delta x \cos \theta$
- $\sum W = \Delta KE$
- $KE = \frac{1}{2} m v^2$
- $\sum W_{n.c.} = \Delta E$
- $PE_g = m g h$
- $PE_s = \frac{1}{2} k (\Delta x)^2$
- $P = \frac{W}{\Delta t} = F v$

Impulse-Momentum:

- $\vec{p} = m \vec{v}$
- $\vec{J} = \vec{F}_{avg} \Delta t$
- $\sum \vec{J} = \Delta \vec{p}$

Electrostatics:

- $\vec{F} = q \vec{E}$
- $F = k \frac{q_1 q_2}{r^2}$
- $E = k \frac{q}{r^2}$
- $\Delta PE = q \Delta V$
- $PE = k \frac{q_1 q_2}{r}$
- $V = k \frac{q}{r}$

Circuits:

- $\Delta V = I R$
- $R_{eq} = R_1 + R_2$ (series)
- $\frac{1}{R_{eq}} = \frac{1}{R_1} + \frac{1}{R_2}$ (parallel)
- $P = I \Delta V$
- $\sum I_{in} = \sum I_{out}$
- $\Delta V_{loop} = 0 V$