

A Helping Hand

$$\text{Kinetic Energy} = \frac{\text{Mass} \times \text{Velocity}^2}{2}$$

$$\text{Potential Gravitational Energy} = \text{Height} \times \text{Weight}$$

Constants

3.28 feet	= 1 meter
1 kilometer	= 1000 meters
1 acre	= 43,560 square feet or = 4,840 square yards
1 square yard	= .81 square meters
g	= 9.8 meters per second ²
π	= 3.14
1 mile	= 1.61 kilometers

Newton's Three Laws of Motion

First Law..... Inertia

Second Law..... Force = Mass x Acceleration

Third Law..... For every action force, there is an equal and opposite reaction force.

$$\text{Work} = \text{Force} \times \text{Distance}$$

$$\text{Power} = \frac{\text{Work}}{\text{Time}}$$

$$\text{Momentum} = \text{Mass} \times \text{Velocity}$$

$$\text{Torque} = \text{force} \times \text{Lever Arm}^*$$

* distance

$$\text{Period} = \text{Time} \div \text{num. of revolutions}$$

$$\text{Ave. Speed} = \text{total dist} \div \text{total time}$$

$$\begin{aligned} \text{Circumference} &= \pi \text{ Diameter} \\ &= 2\pi \text{ radius} \end{aligned}$$

$$\text{Speed of Rotating Body} = \text{Circumference} \div \text{period}$$

$$\text{Acceleration} = (\text{Final Velocity} - \text{Initial Velocity}) \div \text{time}$$

$$\text{Ideal Mechanical Advantage} = \frac{\text{Effort Distance}}{\text{Resistance Distance}}$$

$$\text{Actual Mechanical Advantage} = \frac{\text{Resistance Force}}{\text{Effort Force}}$$

$$\text{Efficiency} = \frac{\text{Output Work}}{\text{Input Work}}$$

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