

FORCES AND MOTION SUMMARY SHEET

ACCELERATION: Change in velocity; ie a change in speed AND/OR direction. $a = \frac{V_{(final)} - V_{(initial)}}{\text{time}}$

BALANCED FORCES: When the sum of all forces acting on an object produce no motion

AVERAGE SPEED: Total distance divided by total time with NO direction

CENTRIPETAL FORCE: Acceleration occurring in a circular motion (ie direction changes, velocity does not)

FRICTION: A force that opposes motion by touching an object

INERTIA: The tendency of an object to resist change. Newton's First Law is sometimes called the "Law of Inertia" See also Newton's First Law.

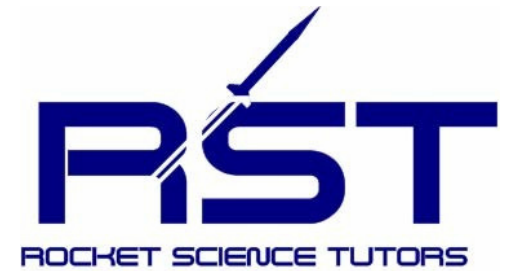
MASS: Amount of matter. DOES NOT change with gravity.

MOMENTUM: Mass times velocity

PROJECTILE MOTION: The curved path an object follows in earth's gravity due to the combination of horizontal and vertical velocities.

VELOCITY: Speed AND direction

WEIGHT: Measure of gravitational pull; DOES change with gravity



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NEWTON'S LAWS OF MOTION

FIRST LAW: An object in motion tends to stay in motion unless acted on by a force. An object at rest tends to stay at rest unless acted on by a force. Also called the "Law of Inertia".

SECOND LAW: Force is equal to the mass times the acceleration or $F = ma$

THIRD LAW: To every action, there is an equal and opposite reaction