

AP Physics 1 Flashcards PDF

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What is Newton's First Law of Motion?

An object at rest stays at rest and an object in motion stays in motion unless acted upon by a net external force.

What is the formula for calculating force?

Force is calculated using the formula $F = ma$, where F is force, m is mass, and a is acceleration.

What is the principle of conservation of energy?

The total energy in a closed system remains constant; energy can neither be created nor destroyed, only transformed.

What is the difference between speed and velocity?

Speed is a scalar quantity that refers to how fast an object is moving, while velocity is a vector quantity that refers to the speed of an object in a given direction.

What is the formula for gravitational potential energy?

Gravitational potential energy is calculated using the formula $PE = mgh$, where PE is potential energy, m is mass, g is the acceleration due to gravity, and h is height.

What is the definition of work in physics?

Work is defined as the process of energy transfer that occurs when an object is moved over a distance by an external force.

What is the relationship between frequency and period?

Frequency is the reciprocal of the period; they are related by the formula $f = 1/T$, where f is frequency and T is the period.

What is the formula for kinetic energy?

Kinetic energy is calculated using the formula $KE = \frac{1}{2}mv^2$, where KE is kinetic energy, m is mass, and v is velocity.

What is the difference between elastic and inelastic collisions?

In elastic collisions, both momentum and kinetic energy are conserved, while in inelastic collisions, momentum is conserved but kinetic energy is not.

What is the definition of momentum?

Momentum is defined as the product of an object's mass and its velocity, represented by the formula $p = mv$, where p is momentum.