

## Physics Flashcards PDF

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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 Newton's first law of motion?

Newton's first law states that an object at rest will remain at rest, and an object in motion will remain in motion at a constant velocity unless acted upon by a net external force.

What is the unit of work in the International System of Units (SI)?

The unit of work in the SI system is the Joules (J).

What is the principle of conservation of energy?

The principle of conservation of energy states that energy cannot be created or destroyed, only transformed from one form to another.

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 includes both speed and direction.

What is the formula for calculating kinetic energy?

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

What is the law of universal gravitation?

The law of universal gravitation states that every point mass attracts every other point mass in the universe with a force that is directly proportional to the product of their masses and inversely proportional to the square of the distance between their centers.

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 formula for calculating potential energy?

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

What is the definition of pressure?

Pressure is defined as the force applied per unit area, typically measured in Pascals (Pa).