For practical physics:

**Machines** must be used in the experiments to reduce human error.

**Video cameras** must be used in the experiments to reduce human error.

**Averaging many experiments reduces random error**.

**Relative error must be about the same for all measurements**.

**λD = ax** Young double-slit experiment (waves)

**d sinA = nλ** diffraction grating (waves)

**ω = 2πf,** (waves)

standing waves.

(resistance, resistivity (electricity))

**F = Eq** (field and force (electricity))

(resistance force (fluid mechanics))

(center of mass (solid mechanics))

**Center of gravity** is the center of parallel forces, moment = 0.

**F = ma** (Newton Second Law (material point, solid mechanics))

**σ = Eε** (Hooks Law (deformed mechanics))

(spring harmonic oscillator period (solid mechanics))

(pendulum harmonic oscillator period (solid mechanics))

(rotational harmonic oscillator period (solid mechanics))

(LC circuit harmonic oscillator period (electricity))