# Chapter 5

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- Newtonian mechanics relate acceleration and forces.
- Forces are vector quantities. Their magnitudes are defined in terms of the acceleration they would give the standard kilogram.
- A force that accelerates the that standard body by exactly 1 $m/s^2$ is defined to have a magnitude of one N (Newton).
- Forces are combined according to the rules of vector algebra. The net force on a body is the vector sum of a the forces acting on the body.
- Reference frames in which Newtonian mechanics hold are inertial (or reference) frames.
- $\vec{F}_{net} = m\vec{a}$
- $1\text{N} = 1kg\dot{m}/s^2$
- Weight it given as $W = mg$
- A normal force $\vec{F_N}$ is the force on a boy from a surface against which a body presses. Normal force is always perpendicular to surface.
- When a cord is under tension each end of the cord pulls on the body.