

## Ten Commandments of Dynamics

- I.  $\mathbf{F} = m\mathbf{a}$ . It just is.
- II. Thou shalt not introduce an angle without two vectors (or lines).
- III. Thou shalt not differentiate a vector without a reference frame.
- IV. Thou shalt only write  $\dot{\theta}\mathbf{k}$  for *simple* angular velocity.
- V. Thou shalt not seek the angular velocity of a point or system.
- VI. Thou shalt not seek the velocity of a rotating body.
- VII. Thou shalt not differentiate a quantity that is valid for an instant.
- VIII. Thou shalt apply forces to points, not bodies.
- IX. Thou shalt not seek potential energy for all systems.
- X. Thou shalt not use  $\mathbf{T} = I\boldsymbol{\alpha}$  for 3D analysis.

