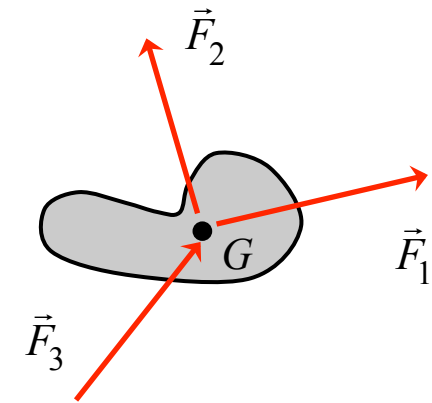


Summary: Newton's Laws 1

FUNDAMENTAL equation: For a set of forces acting concurrently at the center of mass G of a body, we have Newton's 2nd Law:

$$\sum \vec{F} = m\vec{a}_G$$



SOLUTION PROCESS:

1. Draw free body diagram (FBD) for the bodies of interest.
2. Write down the vector components of Newton's 2nd Law for each FBD.
3. Write down the appropriate kinematics (acceleration) equations for the right-hand side of the equations.
4. Count the number of equations available from above, and count the number of unknowns. If you have enough equations, solve for the desired unknowns. If you do not have enough equations, then you have either missed needed information from kinematics or you need to draw more/different FBDs.