

PLANE KINETICS OF RIGID BODIES

EXTERNAL FORCES & RESULTING TRANSLATIONAL and ROTATIONAL MOTIONS

KINEMATICS V. IMPORTANT

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

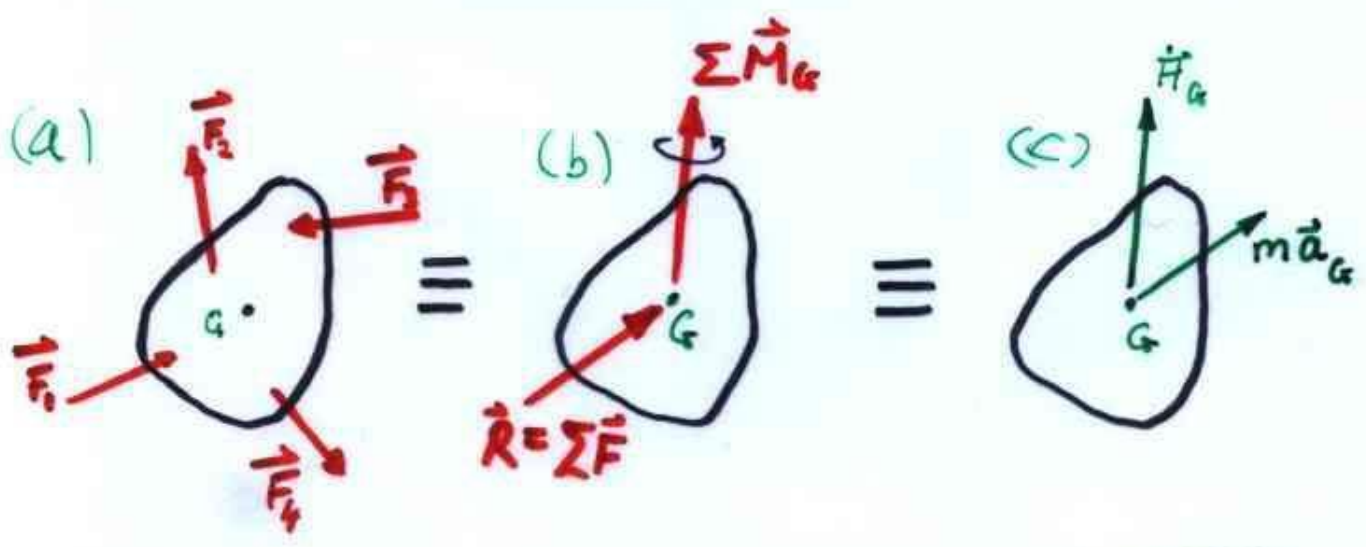
\vec{F} = force
 m = mass
 \vec{a}_G = acceleration of mass center

$$\sum \vec{M}_G = \dot{\vec{H}}_G$$

\vec{M}_G = moment about center of mass
 $\dot{\vec{H}}_G$ = rate of change of angular momentum about c. of mass.

NOTE: BOTH ARE VECTOR SUMS.

THESE ARE GENERAL EQUATIONS \Rightarrow WIDELY USEFUL



F.B.D.

EQUIV FORCE/COUPLE at G

KINETIC DIAGRAM