

PLANE KINETICS OF RIGID BODIES

Q ①

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

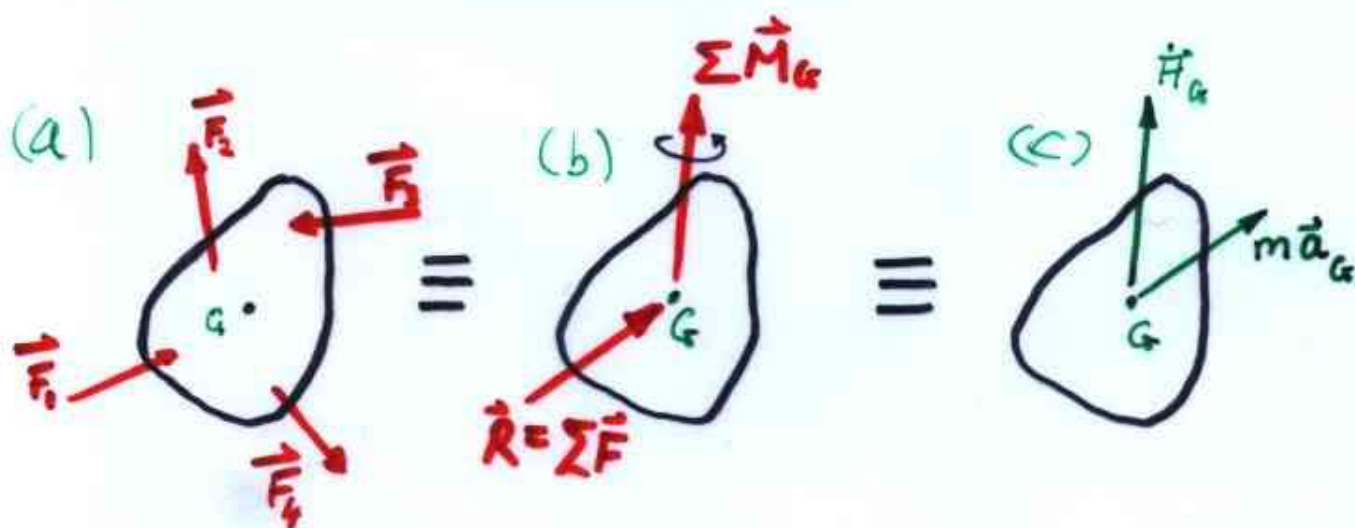
$$\sum \vec{M}_G = \dot{\vec{H}}_G$$

$\vec{M}_G$ = 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