

Summary: Impulse/Momentum Equations 1

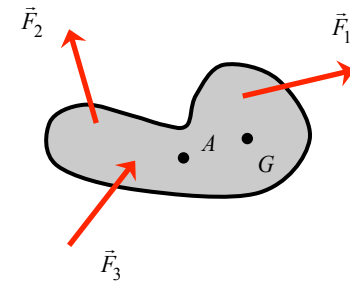
FUNDAMENTAL equations (for your chosen “system”):

$$m\vec{v}_{G2} = m\vec{v}_{G1} + \int_1^2 \vec{F} dt$$

$$\vec{H}_{A2} = \vec{H}_{A1} + \int_1^2 \vec{M}_A dt$$

for A = c.m. OR fixed point, with:

$\vec{H}_A = I_A \vec{\omega} \quad ; \text{ for a RIGID BODY}$ $= m\vec{r}_{P/A} \times \vec{v}_P \quad ; \text{ for a particle } P$



SYSTEM CHOICE: Make your system big (make as many forces internal as possible to take advantage of conservation).

PARALLEL AXIS THEOREM: You will need to use the PAT if you choose A to be anything other than the c.m.:

$$I_A = \boxed{I_G} + md^2$$

cm

