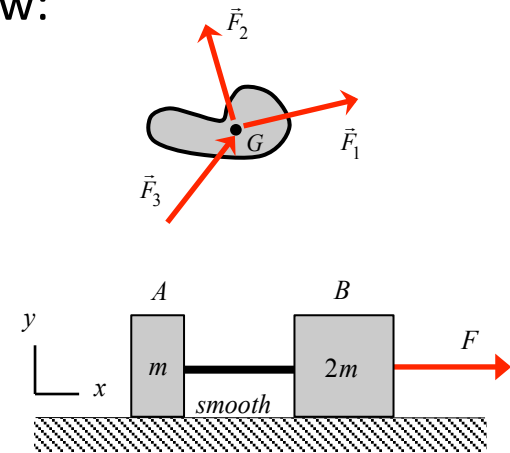


Summary: Newton's Laws 2

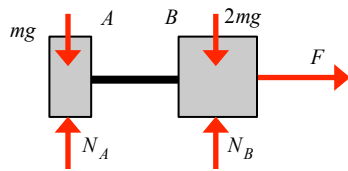
FUNDAMENTAL equation: For a set of forces acting concurrently at the center of mass G of a body, we have Newton's 2nd Law:

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

DRAWING THE RIGHT FBD: Be aware that, for good or bad, "internal forces" of an FBD will not appear in Newton's 2nd Law equation. Consider the system shown with a force F acting on block B.

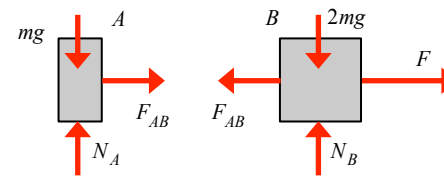


Question 1: What is the acceleration of block B?



$$\sum F_x = F = 3ma \Rightarrow a = \frac{F}{3m}$$

Question 2: What is the force carried by member AB?



$$B: \sum F_x = F - F_{AB} = 2ma \Rightarrow F_{AB} = F - 2ma = \frac{F}{3}$$