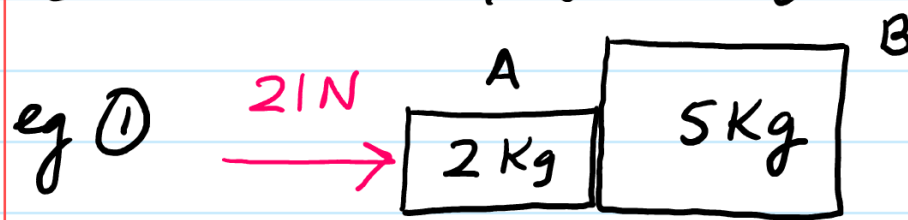


17 November 2020 18:26

• How to find **Action/Reaction forces** based on Newton's 3rd Law.



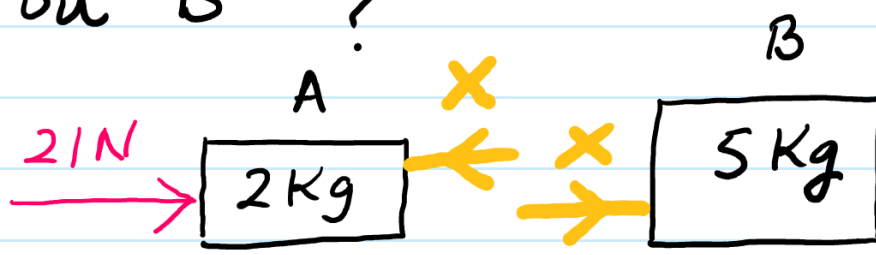
(i) find acc of system

$$F = ma$$

$$21 = (2+5)a$$

$$a = 3 \text{ m/s}^2$$

(ii) find the force which A exerts on B?



$$F = ma$$

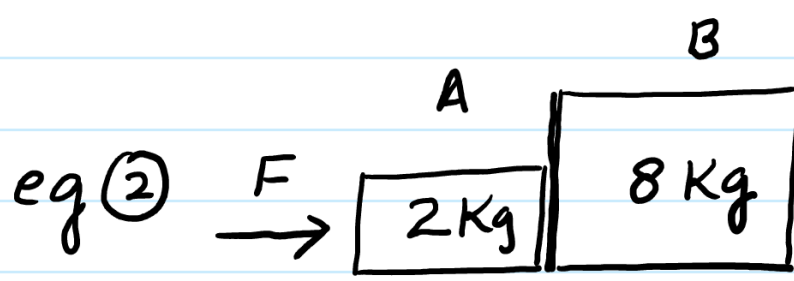
$$21 - X = (2)(3)$$

$$X = 15 \text{ N}$$

$$F = ma$$

$$X = 5(3)$$

$$X = 15 \text{ N}$$

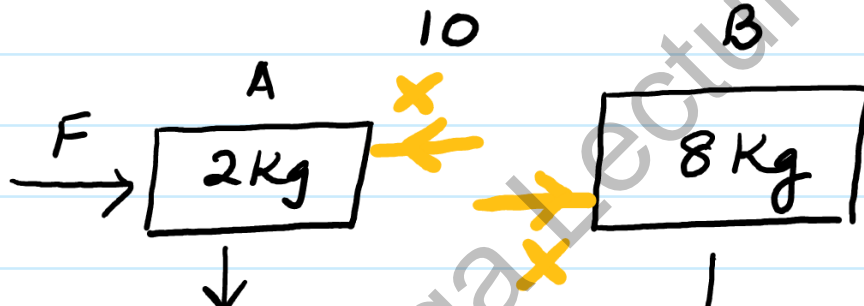


Cal. the force which A exerts on B. (in terms of F).

$$F = ma$$

$$F = (2+8)a$$

$$a = \frac{F}{10}$$



$$F = ma$$

$$F - X = 2\left(\frac{F}{10}\right)$$

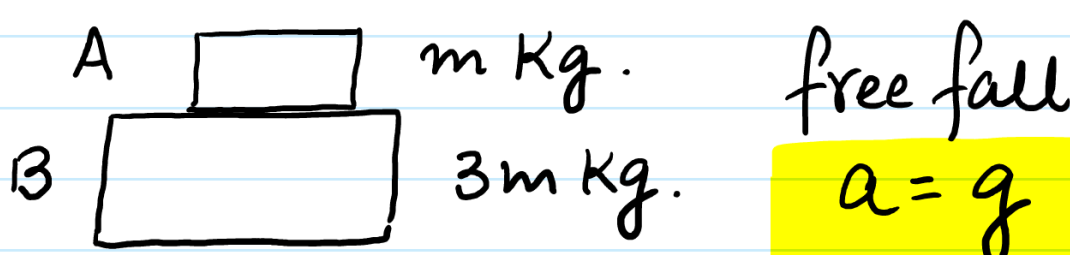
$$X = \frac{8F}{10}$$

$$F = ma$$

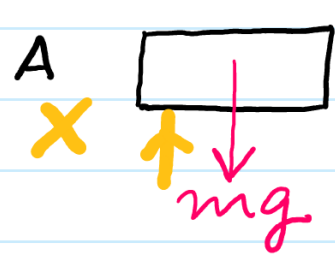
$$X = 8\left(\frac{F}{10}\right)$$

$$X = \frac{8F}{10}$$

eg. How to calculate **Action/Reaction forces** in case of free falling bodies.



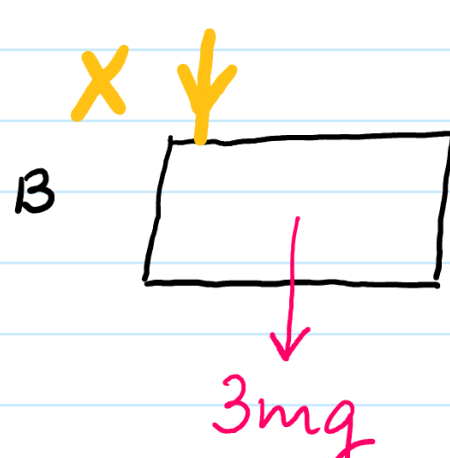
Cal. the force which A exerts on B?



$$F = ma$$

$$mg - X = m(g)$$

$$X = 0 \text{ N}$$



$$F = ma$$

$$3mg + X = 3m(g)$$

$$X = 0 \text{ N}$$

Note: In case of free fall action/reaction forces will be zero (m.e.g's)