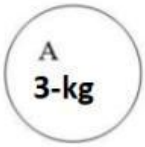
The Law of Conservation of Momentum states that momentum can be transferred from one object to another but the total does not change, momentum is not lost of gain, created or destroyed.

The formula for momentum is **P= mass** times **velocity** or P= **m** x **v** , this means we can put it in the triangle, with **m** x **v** on the bottom and P (momentum on top)

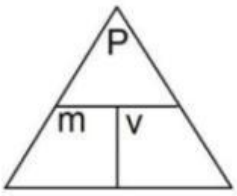
In the problem below, one ball is sitting still, it is stuck by another ball, after to collision momentum has been transferred from the ball that was rolling along to the one that was struck. You are asked to figure out the velocity of the ball that was stuck after the collision.

Before the collision

Ball A is rolling along at 2m/s

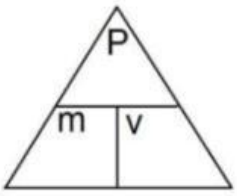


Velocity of Ball A = 2m/s



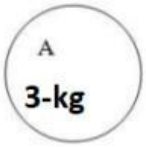
Ball B is just sitting there and not moving 0m/s

Velocity of Ball B = 0m/s

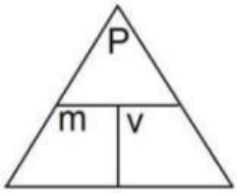


After the collision

Ball A is now rolling at 1m/s

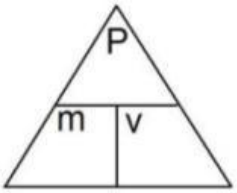


Velocity of Ball A = 1 m/s



When Ball A hit Ball B it transferred mometum to B What is the Velocity of B after the collision?

Velocity of Ball B = ?



After the collision the velocity of Ball B is _____ and the correct unit is _____ (m, m/s, s, m/s•kg)