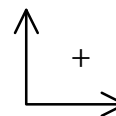
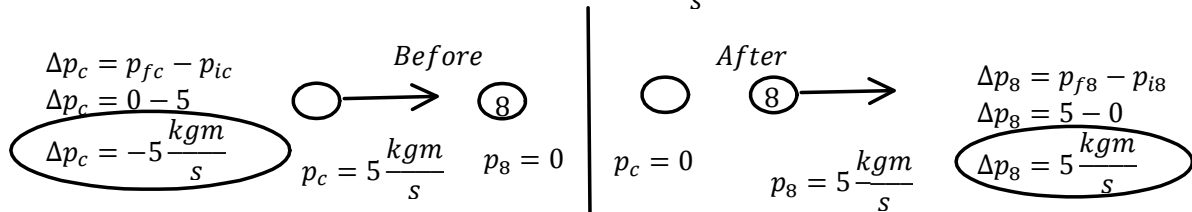


P11 - 5.2 - Conservation of Momentum Notes



The Law of the Conservation of Momentum: Momentum must be conserved!

A Cue Ball is shott with a $p = 5 \frac{kgm}{s}$ at the Eight Ball at Rest. The Cue Ball comes to a Stop, the Eight ball will continue with a $p = 5 \frac{kgm}{s}$. Find Δp of Eight ball and Cue ball?



Momentum Before = Momentum After

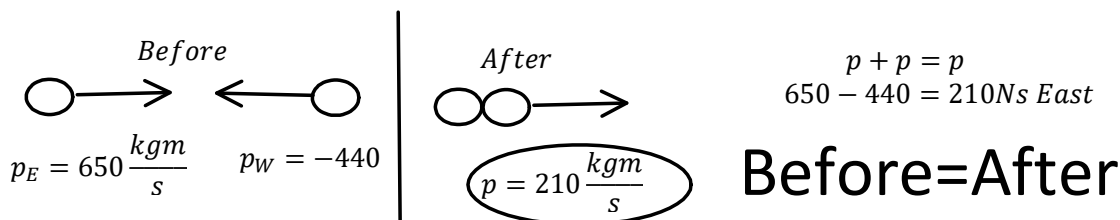
Equal and Opposite

$\Delta p_c = \Delta p_8$
 $p_{fc} - p_{ic} = p_{f8} - p_{i8}$
 $0 - 5 = 5 - 0$
 $-5 \frac{kgm}{s} = 5 \frac{kgm}{s}$

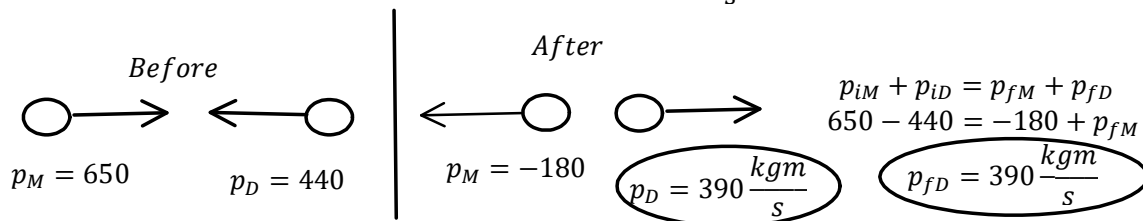
Before=After

$p_i = p_f$
 $p_{1i} + p_{2i} = p_{1f} + p_{2f}$
 $m_1 v_{1i} + m_2 v_{2i} = m_1 v_{1f} + m_2 v_{2f}$
 $5 + 0 = 0 + 5$
 $5 = 5 \checkmark$

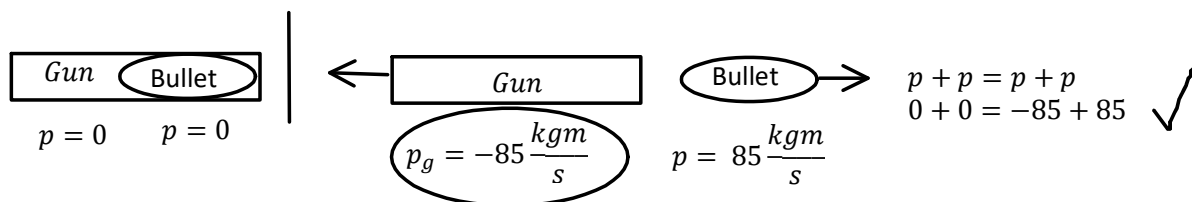
A Marie with a $p = 650$ Ns moving East, collides with a Doug with a $p = 440$ Ns moving West. If they Stick together, what is their Final Momentum?



If they Bounce off each other, and Marie's $p = -180 \frac{kgm}{s}$, Find Doug's final p ?



A Bullet is fired from a Gun with a $p = 85 \frac{kgm}{s}$. What is the recoil Momentum of the Gun.



Left=Right