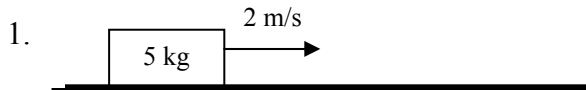


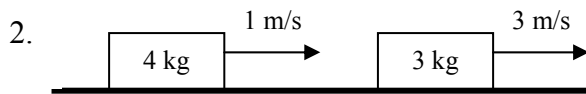
**W7.01****MOMENTUM**  
Inelastic Collisions

For all problems, assume all surfaces are frictionless.

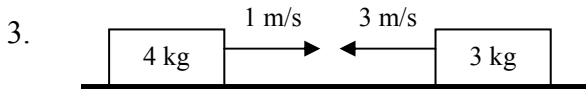
I. For #'s 1-4, calculate the momentum,  $p = mv$ , of each system and each individual object.



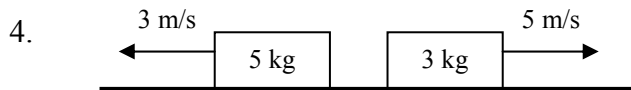
$$p_{\text{total}} = \underline{\hspace{2cm}}$$



$$p_1 = \underline{\hspace{2cm}} \quad p_2 = \underline{\hspace{2cm}} \quad p_{\text{total}} = \underline{\hspace{2cm}}$$




$$p_1 = \underline{\hspace{2cm}} \quad p_2 = \underline{\hspace{2cm}} \quad p_{\text{total}} = \underline{\hspace{2cm}}$$




$$p_1 = \underline{\hspace{2cm}} \quad p_2 = \underline{\hspace{2cm}} \quad p_{\text{total}} = \underline{\hspace{2cm}}$$


II. For the problems below, two boxes collide and stick together (an inelastic collision). The boxes before the collision are shown on the left; the boxes after the collision are shown on the right. Solve for the indicated unknown quantities.

5. 


$p_{\text{total initial}} = \underline{\hspace{2cm}}$        $p_{\text{total final}} = \underline{\hspace{2cm}}$        $v_{\text{total}} = \underline{\hspace{2cm}}$   
 $KE_{\text{total initial}} = \underline{\hspace{2cm}}$        $KE_{\text{total final}} = \underline{\hspace{2cm}}$

6. 

$p_{\text{total initial}} = \underline{\hspace{2cm}}$        $p_{\text{total final}} = \underline{\hspace{2cm}}$        $v_{\text{total}} = \underline{\hspace{2cm}}$   
 $KE_{\text{total initial}} = \underline{\hspace{2cm}}$        $KE_{\text{total final}} = \underline{\hspace{2cm}}$

7. 

$p_{\text{total initial}} = \underline{\hspace{2cm}}$        $p_{\text{total final}} = \underline{\hspace{2cm}}$        $v_{\text{total}} = \underline{\hspace{2cm}}$   
 $KE_{\text{total initial}} = \underline{\hspace{2cm}}$        $KE_{\text{total final}} = \underline{\hspace{2cm}}$

8. 

$p_{\text{total initial}} = \underline{\hspace{2cm}}$        $p_{\text{total final}} = \underline{\hspace{2cm}}$        $v_{\text{total}} = \underline{\hspace{2cm}}$   
 $KE_{\text{total initial}} = \underline{\hspace{2cm}}$        $KE_{\text{total final}} = \underline{\hspace{2cm}}$