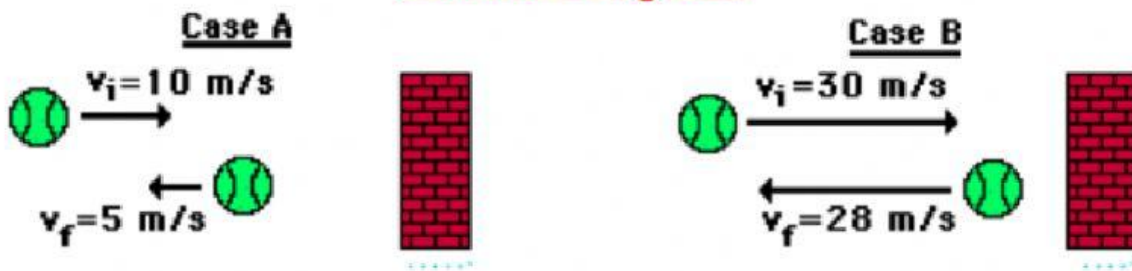


**MOMENTUM/ IMPULSO
QUIZ**

NAME: _____ **DATE:** _____

Consider the diagram at the right for the next three questions. The diagram depicts Before and After velocities of a ball of 1kg in two different collisions with a wall. Assume that the collision time for each collision is the same.

Vector Diagram



(5 points) In which case does the car experience the greatest momentum change?

- a. Case A
- b. Case B
- c. Both the same
- d. Insufficient information

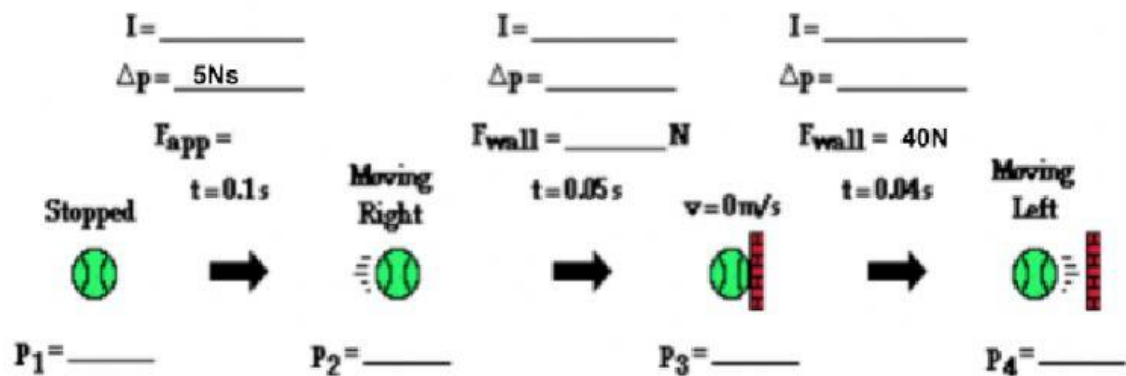
(5 points) In which case does the car experience the greatest impulse?

- a. Case A
- b. Case B
- c. Both the same
- d. Insufficient information

(5 points) The impulse encountered by the 1-kg ball in case A has a magnitude of ____ N•s.

- a. 0
- b. 5
- c. 30
- d. 15
- e. 10
- f. Not enough information to determine.

(36 points) A tennis ball is at rest when it experiences a forward force to set it in motion. It then strikes a wall where it encounters a force that slows it down and finally turns it around and sends it backwards.



A large truck and a Volkswagen (VW) beetle have a head-on collision. write Truck, VW or both the same

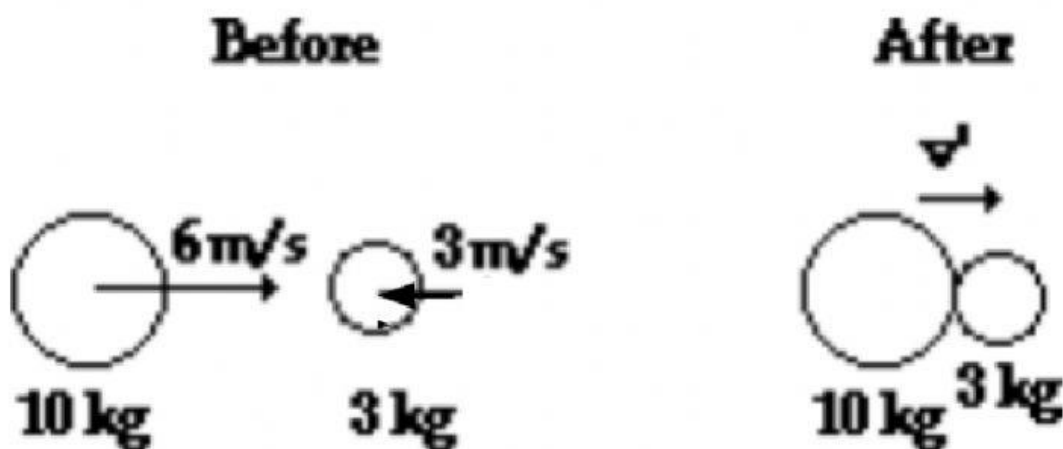
(5 points) Which object experiences the greatest force?

(5 points) Which object experiences the greatest impulse?

(4 points) Which object experiences the greatest momentum?

(5 points) Which object experiences the greatest acceleration?

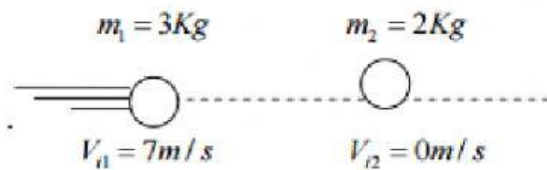
(10 points) Determine the post-collision velocities of the following objects or combination of objects. m/s



(**20 points**) Una bola de masa $m_1 = 3 \text{ Kg}$ se mueve a razón de 7 m/s , dirigiéndose hacia otra de masa $m_2 = 2 \text{ Kg}$ que se encuentra en reposo. Después del impacto, la bola m_1 se mueve a 4 m/s formando un ángulo de 40° como se muestra en la figura. Encuentre la magnitud y dirección de la velocidad de la bola de m_2

m/s

Grados al



Solución

$V_{f1} = 4 \text{ m/s}$

Fig. 5.6

