

1) Datos

$$m = 200 \text{ gr} = 0.2 \text{ kg}$$

$$v_1 = 3 \text{ m/s}$$

$$v_2 = 8 \text{ m/s}$$

$$t = 45 \text{ seg}$$

$$Q_1 = ? \quad 0.6 \text{ m/s}$$

$$I = 1.848$$

$$F = 1.962$$

$$Q_2 = m \cdot v$$

$$Q_2 = (0.2) (8 \text{ m/s}) = 1.6 \text{ m/s}$$

$$Q_1 = m \cdot v$$
$$Q_2 = m \cdot v$$

$$I = F \cdot t$$

$$I = (0.2) (9.81) 4 = 7.848$$

$$F = (0.2) (9.81) = 1.962$$

$$Q = m \cdot v$$

$$Q = (0.2) (3 \text{ m/s}) = 0.6$$

a) Fuerza aplicada

$$F = \frac{m \cdot v}{t}$$

$$F = \frac{(45 \text{ kg}) (60 \text{ m/s})}{85} = 317.65$$

b) Cantidad de movimiento

$$q = m \cdot v \quad q = (45 \text{ kg}) (60 \text{ m/s}) = 2700 \text{ kg m/s}$$

c) impulso

$$I = F \cdot t \quad I = (317.65 \text{ N}) (85) = 27000 \text{ kg m/s}$$

d) cantidad de movimiento

$$\text{Datos} = m = 50 \text{ kg} \quad v = 2.4 \text{ m/s}$$

$$q = m \cdot v = (50 \text{ kg}) (2.4 \text{ m/s}) = 120 \text{ kgm/s}$$

e) Aceleración

$$a = \frac{F}{m} = \frac{9810 \text{ N}}{1000 \text{ kg}} = 9.81 \text{ m/s}^2$$

$$F = m \cdot g = (1000 \text{ kg}) (9.81 \text{ m/s}^2) = 9810 \text{ N}$$

f) tiempo durante la aceleración

$$F \cdot t = m \cdot a$$

$$t = \frac{m \cdot a}{F} = \frac{(1000 \text{ kg}) (9.81 \text{ m/s}^2)}{9810 \text{ N}} = 1 \text{ seg}$$

fuerza

$$9810 \text{ N}$$

g) Cantidad de movimiento

$$m \cdot v = (1000 \text{ kg}) (20 \text{ m/s}) = 20000 \text{ kgm/s}$$