

# EXTRA CREDIT EXAMPLE

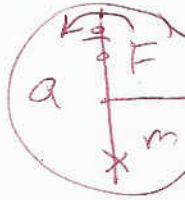
40 N of force are applied to a bowling ball. It accelerates at  $3 \text{ m/s}^2$ . After 2 seconds, it is travelling at  $6 \text{ m/s}$ . What is the ball's momentum?

$$p = m \times v$$

$$v = 6 \text{ m/s}$$
$$m = ?$$
$$p = ?$$

$$F = m \times a$$

$$m = \frac{F}{a}$$



$$m = ?$$

$$F = 40 \text{ N}$$

$$a = 3 \text{ m/s}^2$$

$$p = 13.33 \text{ kg} \times 6 \text{ m/s}$$

$$m = \frac{40 \text{ N}}{3 \text{ m/s}^2} = 13.33 \text{ kg}$$

$$p = 80 \text{ kg} \cdot \text{m/s}$$