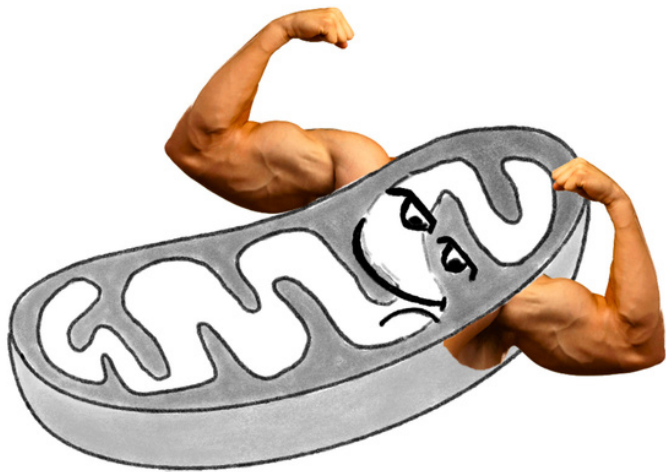


# AP PHYSICS 1

## CONSERVATION OF MOMENTUM REVIEW



## When is momentum conserved?

1. No net external forces (such as friction)
  - Internal forces only

2. Isolated System

$$\Rightarrow P_i = P_f \text{ ] conservation of momentum}$$

# TYPES OF COLLISIONS

**Inelastic collision:** momentum is conserved, however, energy is not

→ **Perfectly inelastic:** objects stick

**Elastic collision:** both energy & momentum are conserved

→ objects bounce off e/ other

# EQUATIONS TO KNOW

↙ momentum

$$P = m \cdot v$$

$$\text{unit: } N \cdot s \text{ or } \frac{kg \cdot m}{s}$$

$$J = F_{avg} \cdot \Delta t$$

$$\text{unit: } N \cdot s \text{ or } \frac{kg \cdot m}{s}$$

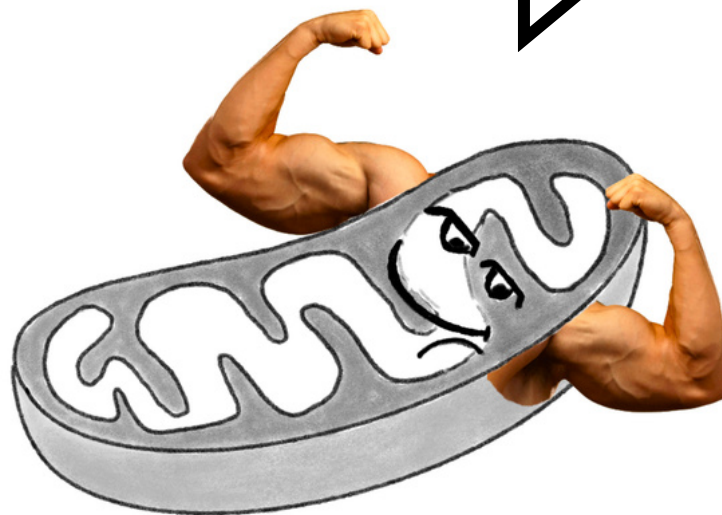
↑ impulse

$$P_i = P_f \rightarrow \text{conservation of momentum}$$

# THINGS TO REMEMBER

1. Momentum = vector → consider direction, & x y components for conservation of momentum
2. area under  $F \times t$  graph → impulse

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