Chapter 7 Review - AP

Speed	KE	Momentum
scalar	scaler	vector
not conserved	conserved for elastic collision	ALWAYS conserved (x and y separate)
m/s	J	kg m/s or Ns
v	1/2mv²	mv

Impulse

Δp = Δmv = Ft   F = mΔv/t = ma

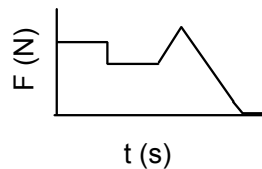small t = BIG F....hit hard floor...ouch!

BIG T = small F....soft bed...ahhhh!!

greatest for bouncing

Graphs

F (N) vs t (s)

area = Ft = impulse

represents CHANGE in momentum...NOT momentum at that point

Types of interactions

1) Explosion - p total = 0 ALWAYS

$$-m_1v_1 = m_2v_2$$

2)Sticky - objects travel together either BEFORE or AFTER collision

$$m_1v_{1o} + m_2v_{2o} = (m_1+m_2)v_f$$

3)Bouncy- objects never travel together and p total never = 0

$$m_1v_{1o} + m_2v_{2o} = m_1v_{1f} + m_2v_{2f}$$

Center of Mass

$$x_{cm} = \Sigma mx/\Sigma m$$

REMEMBER x_{cm} is measured from a defined 0

Elastic collision = KE conserved

Non elastic = KE NOT conserved

MOMENTUM IS ALWAYS CONSERVED UNLESS THERE IS AN OUTSIDE NET IMPULSE