TEST - UNIT 3 (MOMENTUM + ENERGY)

Chapter 6 - Work, Power + Efficiency.

$W = F_{\parallel} \Delta d$

$W = F \Delta d \cos\theta$

W = area under F-d graph

$W = \Delta E$

Situations (3) when no work is done.

$E_k = \frac{1}{2}mv^2$

$E_g = mgh$

$E_e = \frac{1}{2}kx^2$ where $F_a = kx$ (Hooke's Law)

$P = \frac{W}{\Delta t}$

$\text{Efficiency} = \frac{E_o}{E_I} \times 100\%$

Chapter 7 - Conservation of Energy + Momentum

Law of Conservation of Mechanical Energy:

$$E_{total} = E'_{total}$$

$$E_K + E_g + E_e = E'_K + E'_g + E'_K$$

* obeyed if there are no frictional forces.

Law of Conservation of momentum:

$$P_{total} = P'_{total}$$

$$\vec{P}_A + \vec{P}_B = \vec{P}_A' + \vec{P}_B'$$

} in an isolated system (i.e. no friction)

Elastic Collision → KE is conserved
→ you need to know all velocities (use cons of momentum)

DO NOT WORRY ABOUT: p297 - 299, § 7-2, § 7-4

Review: p328/20-23, 25, 27-31