CONCEPT: OVERVIEW OF COLLISION TYPES

- There are 3 types of collisions that you'll need to be able to identify.
  - **Momentum** will be conserved in ALL collisions, but **Energy** may not be.

ELASTIC

- Momentum & Mech. Energy conserved

BEFORE

$p_{sys,i} = 10, \quad ME_{sys,i} = 20J$

AFTER

$p_{sys,f} = 10, \quad ME_{sys,f} = 20J$

Momentum conserved? **[YES | NO]**
Mech. Energy conserved? **[YES | NO]**
Objects stick together? **[YES | NO]**

Ball returns to _____ height

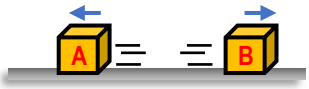
INELASTIC

- Momentum conserved, Mech. Energy not conserved (*SOME* M.E is lost)

BEFORE

$p_{sys,i} = 10, \quad ME_{sys,i} = 20J$

AFTER



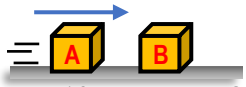
$p_{sys,f} = 10, \quad ME_{sys,f} = 10J$

Momentum conserved? **[YES | NO]**
Mech. Energy conserved? **[YES | NO]**
Objects stick together? **[YES | NO]**

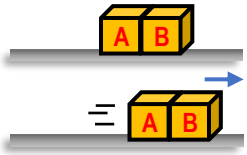
Ball returns to _____ height

Subtype: Completely / Perfectly Inelastic

- Obj's move with same ___ after colliding



$p_{sys,i} = 10, \quad ME_{sys,i} = 20J$



$p_{sys,f} = 10, \quad ME_{sys,f} = 10J$

Momentum conserved? **[YES | NO]**
Mech. Energy conserved? **[YES | NO]**
Objects stick together? **[YES | NO]**

Ball sticks to floor