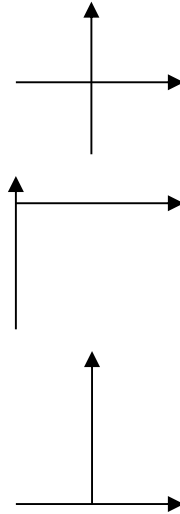


**Types of Energy**

U3P2a

- \_\_\_\_\_ -- energy of motion; the only “\_\_\_\_\_” energy
- Potential Energy – The \_\_\_\_\_ to have \_\_\_\_\_ energy at a future time, because of an object’s \_\_\_\_\_ compared to another object.

1. PE<sub>g</sub> - \_\_\_\_\_ PE – comes from of an object being above Earth’s surface (Note: 0 m may not be the \_\_\_\_\_). (\_\_\_\_=\_\_\_\_\_)
2. PE<sub>g</sub> - \_\_\_\_\_ PE – comes from being WAY above planet’s surface (Note: 0 m is the \_\_\_\_\_ of the \_\_\_\_\_). (\_\_\_\_=\_\_\_\_\_)
3. PE<sub>e</sub> - \_\_\_\_\_ PE – come from the \_\_\_\_\_ between positively or negatively charged objects. (\_\_\_\_=\_\_\_\_\_)
4. PE<sub>s</sub> - \_\_\_\_\_ PE – come from the \_\_\_\_\_/\_\_\_\_\_ of a spring away from its equilibrium position. (\_\_\_\_=\_\_\_\_\_)



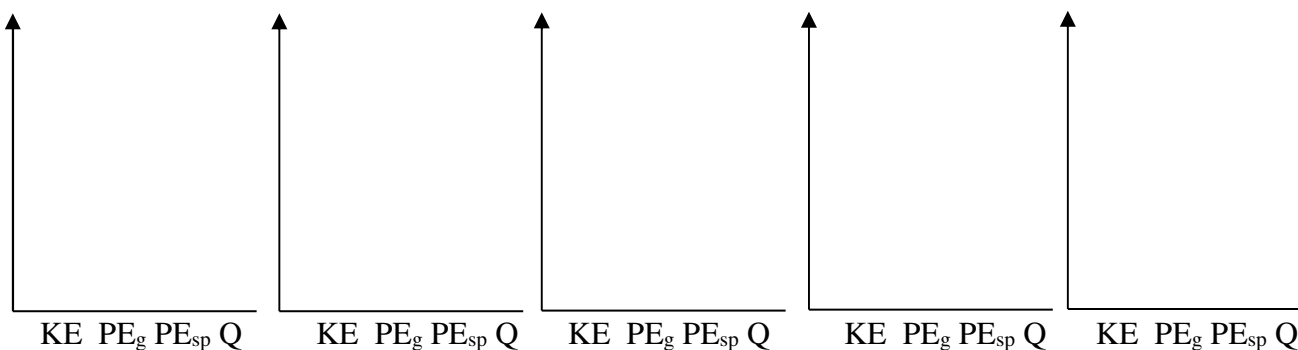
**Conservation of Energy** (assuming a \_\_\_\_\_)

- Total \_\_\_\_\_ is always \_\_\_\_\_.
- So, the sum of “true” energy (\_\_\_\_), the possibility of KE in the future due to position (\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_) and lost energy (\_\_\_\_\_ - \_\_\_\_\_) is \_\_\_\_\_.
- Thus, \_\_\_\_\_ = \_\_\_\_\_ => \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ is always true.  
If no heat is produced (by \_\_\_\_\_), then this simplifies to the law of \_\_\_\_\_ of mechanical \_\_\_\_\_. \_\_\_\_\_ = \_\_\_\_\_
- When an object falls down (in a state of \_\_\_\_\_), as \_\_\_\_\_ decreases, \_\_\_\_\_ increases.
- When an object rises upward (in a state of \_\_\_\_\_), as \_\_\_\_\_ decreases, \_\_\_\_\_ increases.  
\_\_\_\_\_ = \_\_\_\_\_

**Conservative vs. Non-conservative Forces**

- \_\_\_\_\_ forces give you back all the “real” energy (\_\_\_\_) they take away (i.e. \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, etc.)
- \_\_\_\_\_ forces “use up” \_\_\_\_\_ (actually change \_\_\_\_\_ into \_\_\_\_\_) (i.e. \_\_\_\_\_)

**Interpreting a PE Graph** (assuming a \_\_\_\_\_)



**More Examples**

Roller coaster

Sticky pinball machine –

How far will the block slide along the ramp?

1. What g-force ( $W_{app}$ ) be felt at loop's bottom?

2. What is the minimum hill height necessary so that the cart stays in contact with the track?