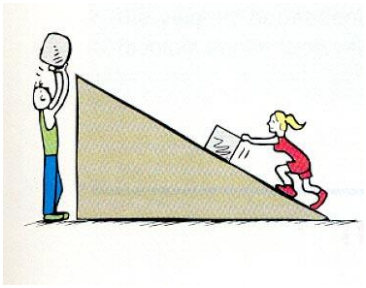
Name: _____ **Period:** _____ **Date:** _____

Energy

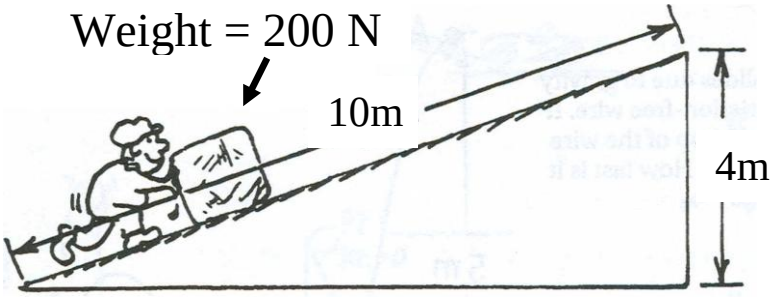
The ability to do _____is energy.

Energy is also measured in_____

_____ _____is stored energy.



- Gravitational Potential Energy is potential energy that depends on an_____
- It is equal to the _____ in lifting the object
- It can be calculated by multiplying the weight of the object by the height the object is lifted
  - PE = _____ = _____
  - PE =_____ (g=10m/s^2)



_____ _____is energy of motion

- Kinetic energy depends on the _____ and the _____of an object
  - It is equal to half of the mass of the object multiplied by the square of the speed
- KE = _____

PE = PE = KE=

1. Calculate the potential energy if 15 **kg** is lifted to a height of 3 meters.

_____

2. What is the kinetic energy of a 30 kg mass moving at 5 m/s? _____

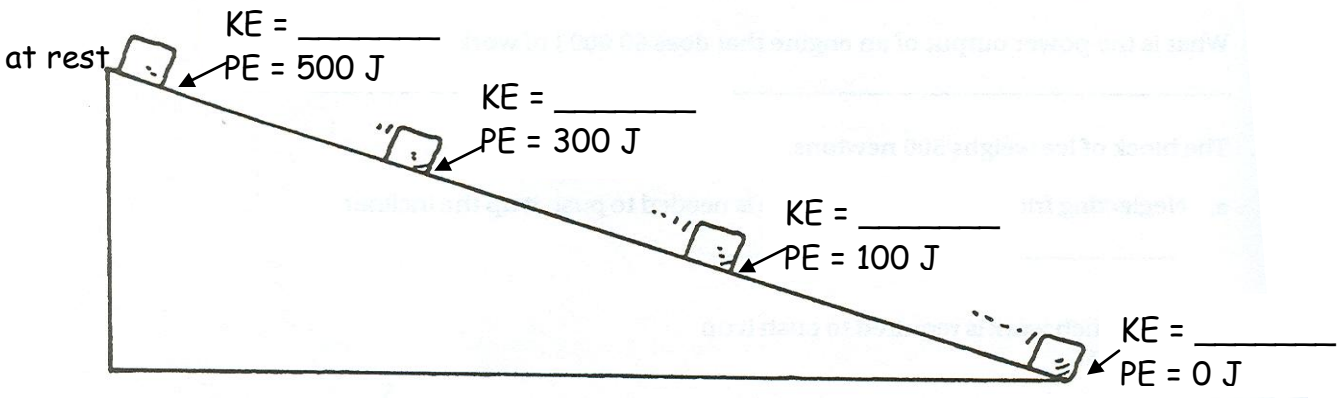
3. Calculate the potential energy if 35 **N** is lifted to a height of 7 meters.

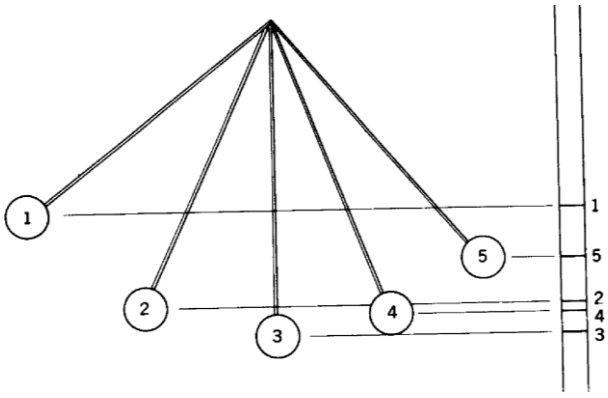
_____

4. What is the kinetic energy of a 100kg mass moving at 2 m/s?

_____

Energy cannot be created or destroyed; it may be transformed from one form into another or transferred from one object to another, but the total amount of energy never changes.





A. At which position is the kinetic energy the greatest?

B. At which position is the potential energy the greatest?

C. At which position is the kinetic energy the smallest?

D. At which position is the potential energy the smallest?

E. At which position is the speed the greatest?

Name: _____ Period: _____ Date: _____

Solve the following problems. ***Show your work.*** Include a ***label.***

1. How much work is done when 50N is lifted 2.5 meters? _____

2. Calculate work in the following situation: A force of 255N acts through a distance of 6.5 meters

_____

3. Calculate the potential energy if 35 **kg** is lifted to a height of 3 meters.

_____

4. What is the kinetic energy of a 90kg mass moving at 3 m/s?

_____

5. How much work is done when 60N is lifted 5 meters? _____

6. Calculate work when a force of 300N acts through a distance of 6 meters

_____

7. Calculate the potential energy if 50 **kg** is lifted to a height of 2 meters.

_____

8. What is the kinetic energy of a 250kg mass moving at 5 m/s? _____