KINETIC AND POTENTIAL ENERGY WORKSHEET   Initials:_____

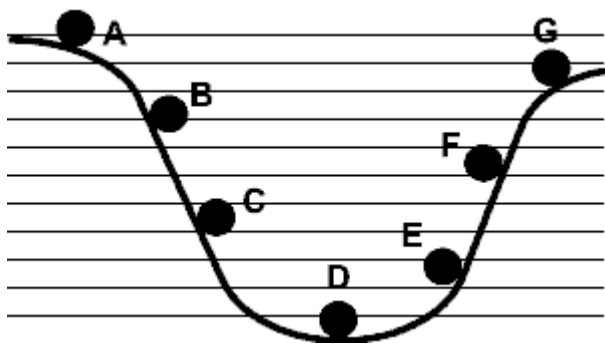| **Potential Energy**	**Kinetic Energy**
Potential Energy is energy of position. An object gets potential energy from height, mass and gravity. An object with potential energy has the potential to do work. This potential is only released when the object falls.	Kinetic Energy is energy of motion. An object gets kinetic energy from its mass and velocity. An object with kinetic energy has energy stored in motion.

(1) An object that is <u>not moving</u> has _____ (potential or kinetic energy)?

(2) An object that <u>is moving</u> has _____ (potential or kinetic energy)?
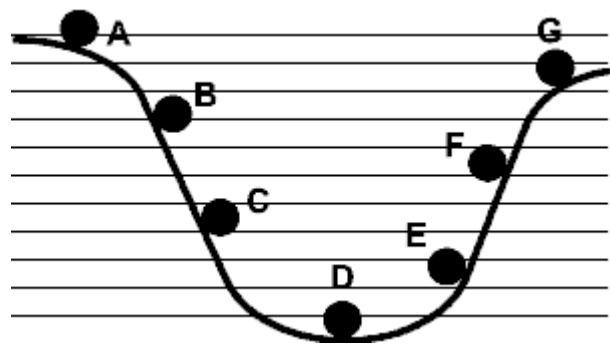

These graphs shows a ball rolling from A to G.
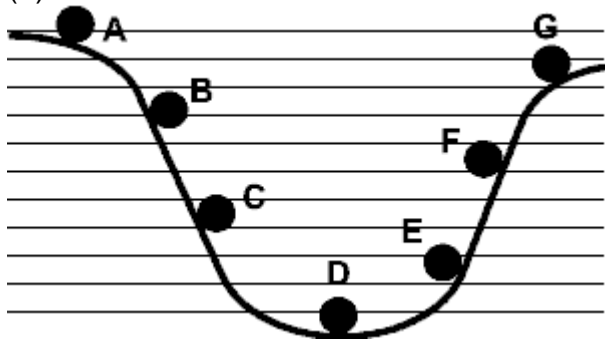
(3)

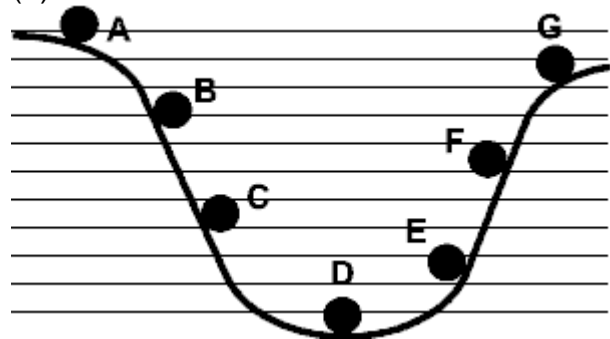Which letter shows the ball when it has the maximum kinetic energy? _____

(4)

Which letter shows the ball when it has the maximum potential energy? _____

(5)

Which letter shows the ball when it has the least potential energy? _____

(6)

Which letter shows the ball when it has the least kinetic energy? _____

Determine whether the objects in the following problems have kinetic (KE) or potential energy. (PE).   Then, use the appropriate formula to calculate the answer.

KE = <u>mass x velocity^2</u>
                2

PE = m (mass) x g (gravity) x h (height)
On Earth, gravity (g) = 9.8 m/s^2, so in the formula substitute 9.8 for gravity.

7. You serve a volleyball with a mass of 2 kg. The ball leaves your hand with a speed of 30 m/s. The ball has **<u>kinetic</u>** energy.   Calculate it.

8. A baby carriage is sitting at the top of a hill that is 20 m high. The carriage with the baby in it weighs 10 kg. The carriage has **<u>potential</u>** energy.   Calculate it.

9. A car is traveling with a velocity of 20 m/s and has a weight (mass) of 1000 kg. The car has **<u>kinetic</u>** energy. Calculate it.

10. There is a bell at the top of a tower that is 20 m high. The bell weighs 100 kg. The bell has **<u>potential</u>** energy. Calculate it.