30 pts Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Potential Energy Worksheet

1. Potential energy can be defined as....

2. Identify each example below as its correct form of potential energy: g = gravitational, e = elastic, and c = chemical.

1. \_\_\_\_\_\_ gasoline in a car d. \_\_\_\_\_\_ winding up a tinker toy
2. \_\_\_\_\_\_ raindrop forming in a cloud e. \_\_\_\_\_\_ a bucket hanging from a rope
3. \_\_\_\_\_\_ pulling back on a bow (arrow) f. \_\_\_\_\_\_\_ eating an apple

The equation to be used to calculate gravitational potential energy (GPE) is...

3. The SI unit in which GPE is often measured is the ...\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

4. Gravitational Potential Energy depends on what 3 things?

5. Maria is holding a ball from a height of 2 m that has the potential energy of 10 J. Calculate the mass of the ball. Show your work!

6. Brian has an object suspended in the air. It has a mass of 100 kg and is 25 meters above the ground. What is the object’s potential energy? Show your work!

1. The mass of a rock is 1220 kg. It had 400 J of potential energy before it rolled down the hill. Calculate how tall the hill was that the rock was sitting on. Show your work!
2. John has an object suspended in the air. It has a mass of 50 kg and is 50 m above the ground. How much work would the object do if it was dropped? Show your work!
3. Mrs. Jacobs dropped an object from 10 m. She knows it did 50 J of work. What was its mass? Show your work!
4. Cindy is holding a tennis ball outside a 2nd floor window (3.5 m from the ground) and Billy is holding one outside a 3rd floor window (6.25 m from the ground). How much more gravitational potential energy does Billy’s tennis ball have if each tennis ball has a mass of 0.06 kg? Show your work!
5. There is a bell at the top of a tower that is 45 m high. The bell has a mass of 190 kg. What is its potential energy? Show your work!
6. Two objects were lifted by a machine. One object had a mass of 2 kg and was lifted at a speed of 2 m/s. The other had a mass of 4 kilograms and was lifted at a rate of 3 m/s. Which object had more potential energy when it was lifted to a distance of 10 m? Show your work!
7. You are on in-line skates at the top of a small hill. Your potential energy is equal to 1000 J. The last time you checked, your mass was 60 kg. What is the height of the hill? Show your work!