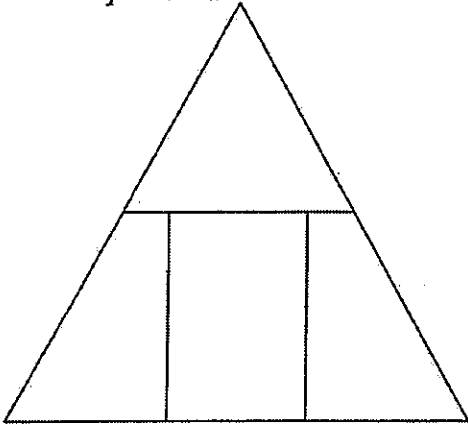


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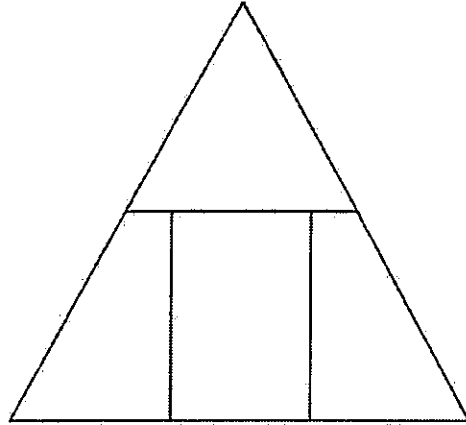
Potential and Kinetic Energy Math WS 2

Directions: Use the equations and triangles below to help you answer the following questions.



$$PE = mgh$$

$$KE = \frac{1}{2} mv^2$$



1. What is the potential energy of a 10kg rock that is sitting on top of a 300 meter hill?
2. What is the kinetic energy of a bicycle with a mass of 14 kg traveling at a velocity of 3 m/s east?
3. A 0.3 kg flower pot is sitting on a windowsill 30 meters from the ground. Is the energy of the flower pot potential or kinetic? How many joules is this?
4. A 1200 kg automobile is traveling at a velocity of 100 m/s south. Is its energy potential or kinetic? How much energy does it possess?
5. How high is a 25 kg object that has 2400 J of potential energy?
6. What is the mass of an object with 840,000 J of energy and is moving with a velocity of 20 m/s?

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7. Calculate the kinetic or potential energy in joules for each of the following situations: *Be sure to tell me if it is Potential or Kinetic Energy.*
- A 2.5 kg book held 2.0 m above the ground
 - A 15 g snowball moving through the air at 3.5 m/s
 - A 35 kg child sitting at the top of a slide that is 3.5 m above the ground
 - An 8500 kg airplane flying at 220 m/s
8. A 1000 kg roller coaster is moving at a speed of 20.0 m/s. How much energy does it have? What type of energy does it have – kinetic or potential?
9. If the roller coaster in the question above moves at twice the speed, what happens to its kinetic energy?
10. A cart is loaded with bricks and pulled to the top of an incline as shown in the figure. The mass of the loaded cart is 30 kg. It is pulled a distance of 0.6 meters to a height of 0.45 meters. What is the potential energy of the cart at its new position?

