

## MECHANICAL ENERGY PRACTICE QUESTIONS

Answer the following questions in your science notebook. Restate the questions in your answer and use complete sentences. If math, show all of your work. No naked numbers!

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1. A car is lifted a certain distance in a service station and therefore has potential energy relative to the floor. If it were lifted twice as high, how much potential energy would it have?
2. A 10 kg mass is lifted to a height of 2 meters.
  - a. What is its weight in Newtons and pounds?
  - b. What is its potential energy at that height?
3. At what height is an object that weighs 490 N if its gravitational potential energy is 4900 J?
4. A rock with a weight of 156.8 N falls 5 meters. What potential energy does it have just before the end of its fall?
5. A 60-kg person walks from the ground to the roof of a 74.8 m tall building. How much gravitational potential energy does she have at the top of the building?
6. A 1400-kg car is moving at a speed of 25 m/s. How much kinetic energy does the car have?
7. A girl on a motorbike passes by at a speed of 15 m/s. Her mass is 40 kg. What is her kinetic energy?
8. What speed does a 1 kg mass have when its kinetic energy is 1 J?
9. Sound is produced by vibrations in material such as air. The particles of air are first pushed together and then pulled apart. Why is sound considered a form of mechanical energy (energy of motion)?
10. A bear in a zoo lies sleeping on a ledge. A visitor comments: "Look at that lazy bear. It has no energy at all." Do you agree? Explain your answer.
11. The diagram below shows a golfer in various stages of her swing. Compare the kinetic and potential energies of the golf club at each labeled point in the complete golf swing.

*ONE MORE QUESTION ON THE BACK!!!*