

## 2008 Energy 1

*VERY Useful Study Helps are available.*

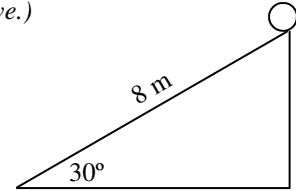
1. A person holds onto an object for 2 minutes, but doesn't move the object. Is work done on the object?
2. What kind of energy is being described: Ek, Ep, W, or PEel?
  - A. \_\_\_\_\_Friction stopping an object from moving.
  - B. \_\_\_\_\_An object is going 6 m/s.
  - C. \_\_\_\_\_A spring is compressed.
  - D. \_\_\_\_\_A moving car.
  - E. \_\_\_\_\_An object is pushed for 3 m.
  - F. \_\_\_\_\_An object on top of a 3 meter table.
3. In the following situations is energy added (gained) or subtracted (lost)?
  - A. \_\_\_\_\_An object is lifted up from the ground.
  - B. \_\_\_\_\_An object is lowered back to the ground.
  - C. \_\_\_\_\_Friction slows an object down.
  - D. \_\_\_\_\_A spring is compressed.
  - E. \_\_\_\_\_An object speeds up.
4. A 200 kg object is going 4 m/s. Find its kinetic energy.
5. A 3 N force pushes on a object for 20 meters. Find the work done.
6. A 4 kg object compresses a spring 0.12 meters. The spring constant for this spring is 2.3 N/m. Find the elastic potential energy stored in the spring.
7. A 10 kg object is 15 meters up a hill. Find its potential energy.
8. A 4 kg object has 400 J of potential energy. Find how high off the ground the object is.
9. A 6 kg object has 350 J of kinetic energy. Find the velocity of the object.
10. A 2 kg object is on spring that is compressed 1.5 meters. If the spring has 2 Joules of Elastic Potential energy, find the spring constant of the spring.

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11. A force did 80 Joules of work on an object in 4 m.  
How big was the force?

*In the equation for potential energy  $h$  is VERTICAL HEIGHT, not distance.*

12. Find the potential energy for a 5 kg ball that is 8 m up a  $30^\circ$  ramp. (*Use the hint above.*)



13. The graphic below shows a ball being released at position A.  
A. At which position does the ball have the most kinetic energy?  
B. At which position does the ball have the most potential energy?

