

Conservation of Energy & Transformation Practice Problems
Physics

Name:
Period:

1. What does the law of conservation of energy state?
2. In energy terms, why does a car rolling down a hill speed up?

3. a) Describe the energy transformations that take place as you swing on a swing.

b) Why do you have to keep pumping to keep swinging as high? What happens if you stop pumping?

4. Describe the energy transformations that take place as a pole-vaulter runs toward the bar, plants the pole and vaults over the bar, finally landing on the cushions on the other side.

5. You pull with 200 N of force for 0.6 m while drawing an arrow in a bow.
 - a) How much energy does the bow have while it is drawn? What type?

 - b) How fast will the arrow be moving just after it is released? [How much energy does it have? What kind? Explain.]

6. Jason has 13720 J of gravitational potential energy standing at the top of a cliff over the lake.
 - a) If they jump off the cliff and fall to the water below, how much kinetic energy will they have when they reach the surface of the water? Explain.

 - b) They come to a stop 5 m beneath the surface of the lake. How hard does the water push on them while stopping them?

 - c) How much energy is there after they stop? Where is it? What kind of energy is it? Explain.