

Potential and Kinetic Energy Worksheet

Ch.12: Work and Energy

Name \_\_\_\_\_

**Gravitation Potential Energy**

1. What is the formula for finding gravitation potential energy?
2. What is the gravitational potential energy associated with a 75kg tourist at the top floor of the Sears Tower in Chicago, with respect to the street 436m below?
3. With an elevation of 5334m above sea level, the village of Aucanquilca, Chile is the highest inhabited town in the world. What would be the gravitational potential energy associated with a 64kg person in Aucanquilca?
4. The volcano, Volcán Chimborazo, is 6267m above sea level. If a mountain climber with a mass of 85kg reaches the mountain's peak, what is the gravitational potential energy associated with the climber with respect to sea level.

**Kinetic Energy**

5. What is the formula for finding kinetic energy?
6. A baseball is pitched with a speed of 35 m/s. If the baseball has a mass of 0.146kg, what is its kinetic energy?
7. A cheetah can run briefly with a speed of 31 m/s. Suppose a cheetah with a mass of 47kg runs at this speed. What is the cheetah's kinetic energy?
8. A ping-pong ball has a mass of about 2.45g. Suppose the ball hit across the table with a speed of about 4.0 m/s. What is its kinetic energy?

- 
9. For each of the following, state whether the system contains primarily *kinetic energy* or *potential energy*...
    - a. a stone in a stretched slingshot \_\_\_\_\_
    - b. a speeding race car \_\_\_\_\_
    - c. a basketball as it leaves your hand and goes towards the hoop \_\_\_\_\_
    - d. water above a hydroelectric dam \_\_\_\_\_