

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Lesson 4, Engineering Sport – Energy Worksheet

— Kinetic OR Potential Energy ?

**Remember:** **Kinetic Energy:**  $KE = \frac{1}{2} m * v^2 = \frac{1}{2} * m * v * v$  (units are kg-m<sup>2</sup>/s<sup>2</sup>)  
**Potential Energy:**  $PE = m * g * h$  (units are kg-m<sup>2</sup>/s<sup>2</sup>)  
and  $g = 9.81$  (or  $\sim 10$ ) m/s<sup>2</sup>

1. An Olympic skier is in the racing stalls waiting for the beginning of the downhill slalom race. He weighs 75kg, and the ski slope is 1,000 m high.



- a. Does he have potential or kinetic energy before the race?

\_\_\_\_\_

- b. What is his potential energy?

\_\_\_\_\_

- c. When he skis down the hill, he reaches a speed of 20 m/s. What is his kinetic energy?

\_\_\_\_\_

2. An Olympic sprinter is going for gold in the 100m dash. She weighs 64kg and runs at 10 m/s.



- a. What type of energy does she have?

\_\_\_\_\_

- b. What is her kinetic energy?

\_\_\_\_\_