

Lesson 4, Engineering Sport – Energy Worksheet

— *Kinetic* OR  *Energy ?*

Remember: **Kenetic Energy:** $KE = \frac{1}{2} m * v^2 = \frac{1}{2} * m * v * v$ (units are $kg \cdot m^2/s^2$)
Potential Energy: $PE = m * g * h$ (units are $kg \cdot m^2/s^2$)
and $g = 9.81$ (or ~ 10) m/s^2

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?
