PROBLEM SET

KINETIC ENERGY

ANSWER ALL QUESTIONS AND SHOW HOW YOU ARRIVE AT THE ANSWERS

1. Determine the kinetic energy of a 1000-kg roller coaster car that is moving with a speed of 20.0 m/s.

   b. If the roller coaster car in the above problem were moving with twice the speed, then what would be its new kinetic energy?

2. Missy Di-water, the former platform diver for the Ringling Brother's Circus had a kinetic energy of 15, 000 J just prior to hitting the bucket of water. If Missy's mass is 50 kg, then what is her speed?

3. What is the kinetic energy of a 63.4 kg man running along at 7.82 m/s?

4. What is the mass of a man running at 3.89 m/s if he has a kinetic energy of 450.9 J?

5. What is the speed of a 45.3 kg woman running with a kinetic energy of 954 J?

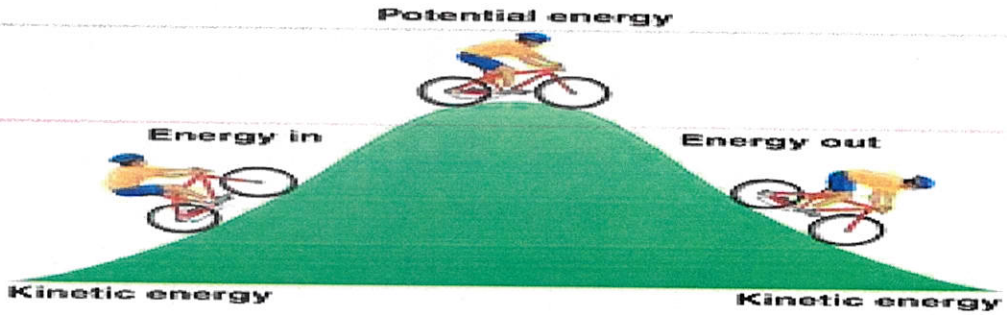
6. What is the speed of a 132.6 kg woman running with a kinetic energy of 3610-J?

7. What is the mass of a man running at 7.8 m/s if he has a kinetic energy of 4149-J?

8. What is the mass of a man running at 5.15 m/s if he has a kinetic energy of 1292-J?

9. What is the kinetic energy of a 42.2 kg man running along at 5.46 m/s?

10. What is the mass of a man running at 6.33 m/s if he has a kinetic energy of 1686 J?



$$E_k = \frac{1}{2} m v^2$$