Practice Problems – Kinetic Energy

Name_____

$$\frac{m \cdot v^2}{2} = K.E.$$

SHOW YOUR WORK AND USE THE CORRECT UNITS!

1. A baseball is pitched with a speed of **35 m/s**. If the baseball has a mass of **0.146 kg**, what is its kinetic energy?

2. A cheetah can run briefly with a speed of **31 m/s**. Suppose a cheetah with a mass of **47 kg** runs at this speed. What is the cheetah's kinetic energy?

3. A table tennis (ping-pong) ball has a mass of about **2.45 g**. Suppose the ball is hit across the table with a speed of about **4.0 m/s**. What is its kinetic energy? (**Hint:** mass unit is in grams and needs to be kg)

4. A 2.0 kg ball and a 4.0 kg ball are traveling at the same speed. If the kinetic energy of the 2.0 kg ball is 5.0 J, what is the kinetic energy of the 4.0 kg ball? **(Hint:** You do not need to solve for the speed.)

5. A 2.0 kg ball has 4.0 J of energy when traveling at a certain speed. What is the kinetic energy of the ball when traveling at twice the original speed? **(Hint:** You do not need to solve for the original speed.)