

$$E_K = \frac{1}{2}mv^2 \quad J = \text{kgm}^2/\text{sec}^2 \quad 28.350 \text{ g} = \text{ounce} \quad 2.54 \text{ cm} = \text{inch} \quad 6.2 \times 10^{-1} \text{ miles} = 1 \text{ km}$$

1. Some reactions occur very fast, if a reaction takes  $3.45 \times 10^1$  ns, how many seconds is this?
2. A lithium atom is approximately  $3.0 \times 10^2$  pm in diameter, how many lithium atoms are needed to form a line that is 2.00 cm long?
3. Convert  $4.5 \times 10^9$  pm<sup>3</sup> to m<sup>3</sup>
4. Give the name and symbol for a noble gas.
5. What group of metals reacts violently with water?
6. Give the name and symbol for a halogen.
7. Give the name and symbol for a metalloid
8. What group of elements contains all diatomic molecules at STP?
9. Ian Kennedy set off a huge donnybrook by throwing a fastball that hit Zack Greinke in the head. What is the kinetic energy of a 5 ounce baseball traveling at 92 miles per hour?
10. What is the thickness of a 10.2cm x 9.67 cm piece of aluminum that weighs 3.4 grams?