Kinetic Energy Sample Problems:

Sample Problem 1:

You watch your sister on the toboggan and realize that she has a kinetic energy of 250 J. You know your sister has a mass of 45kg so what speed is she currently travelling at? (work out the units to show that they are correct!)

Sample Problem 2

You know that a certain comet has a speed of 400 m/s and kinetic energy of 16 000 kJ. Find the mass of the comet.

Sample Problem 3:

A force does 30 J of work in moving an object from rest to a final speed. Determine the final speed of the object if it has a mass of 150 g.

Sample Problem 4: (tricky!)

A force accelerates an object of mass 10 kg from an initial speed of 4m/s to a final speed of 10 m/s.

1. Find the initial kinetic energy of the object
2. Find the final kinetic energy of the object.
3. Find the work done on the object.
4. Find the magnitude of the net force that resulted in this acceleration.