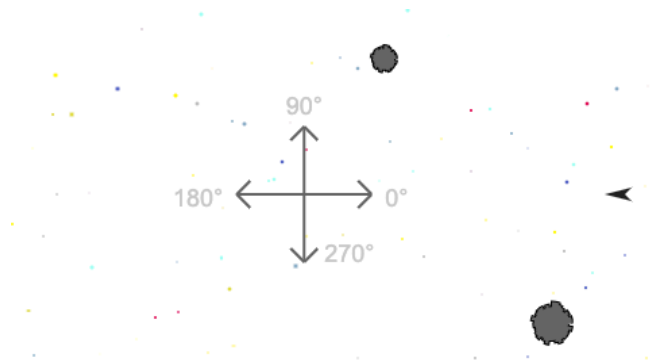


## 2-D Momentum Conservation with Energy

Step 1: Assume the explosive device added no significant momentum to the system. Clearly show all the masses and velocities for the two fragments of the Kuiper Belt Object (KBO) after it was split in two. Draw the velocity vectors of each fragment showing the direction they were moving



Step 2: Calculate the Kinetic Energies of each fragment. Show your work neatly below

Step 3: Use conservation of momentum to find the speed of the KBO before it was split into fragments. Show your work below



Step 4: Now calculate Kinetic Energy of the KBO before it is split into fragments. Find the energy added to the system by the explosion that split the KBO into two pieces. Enter your answers into the program to make sure you did everything correctly