2-1)

Consider a charge Q = 1.31×10^{-17}C held stationary at the origin. A second charge q = 3.2×10^{-19}C with a mass of 6.7×10^{-27} kg is placed 5×10^{-15} m from the first.

A) What is the electrical potential energy of the system?
B) Release the smaller charge. How quickly would it be moving when it is 10^{-12} m from the origin?
C) How quickly would it be moving when it is 10^{-10} m from the origin?
D) How quickly would it be moving when it is 'very far' from the origin?

This corresponds (approximately) to alpha decay of polonium 210 to lead 206.