FP2

Two particles of masses $m_1 = m$ and $m_2 = am$ collide after traveling in the $x - y$ plane with inital velocities $\mathbf{v}_1 = v\hat{x}$ and $\mathbf{v}_2 = bv(cos\theta_{\hat{x}} + sin\theta_{\hat{y}})$ where a and b are postive constants. Gravity is not present in this problem.

a) (2 points) What is the total energy and linear momentum of the two-mass system prior to the collision?

b) (3 points) If the collision is totally inelastic (ie., the masses stick together), how much kinetic energy is lost in the collision?