Momentum in 2 Dimensions

Ex 1: Two rubber balls with identical masses, one of which is stationary, collide on a frictionless surface. The moving ball originally has a velocity of 3.0 m/s to the east. After the collision what are the final velocities of ball 1 and ball 2 given that ball 1 moves at an angle of 350 N of E and Ball 2 moves at an angle of 640 S of E.

Ex 2: 1000. Kg of TNT explodes. A quarter of the mass went 23m/s @ 67o [N of W]. Half of the mass went 18m/s @ 320 [S of E]. The other quarter went somewhere. Find the velocity for the other quarter.