7-5)

Superhero Fledermausman (mass = 80 kg) stands on a ledge 5m above the floor. He swings down on a rope intending to hit his arch enemy, Der Spassmacher (mass = 70 kg) at the very bottom of his swing. An instant before the collision, Fledermausman releases the rope. Now caught in a double death grip, the two slide across the rough floor.

a) What is Fledermausman's speed just before hitting Der Spassmacher?
b) What is the speed of the duo just after the collision?
c) If the co-efficient of kinetic friction between Superhero costume material and floor is 0.25, how far along the floor do they slide?