Small smooth spheres A and B, of equal radii and of masses 5 kg and 3 kg respectively, lie on a smooth horizontal plane. Initially B is at rest and A is moving towards B with speed $8.5\,\mathrm{m\,s^{-1}}$. The spheres collide and after the collision A continues to move in the same direction but with a quarter of the speed of B.

(a) Find the speed of B after the collision. [3]

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(b) Find the loss of kinetic energy of the system due to the collision. [2]

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