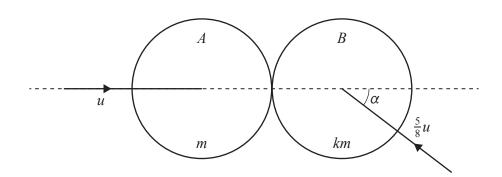
6



Two uniform smooth spheres A and B of equal radii have masses m and km respectively. The two spheres are moving on a horizontal surface with speeds u and $\frac{5}{8}u$ respectively. Immediately before the spheres collide, A is travelling along the line of centres, and B's direction of motion makes an angle α with the line of centres (see diagram). The coefficient of restitution between the spheres is $\frac{2}{3}$ and $\tan \alpha = \frac{3}{4}$.

After the collision, the direction of motion of *B* is perpendicular to the line of centres.

(a)	Find the value of k .	[4]

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of the collision.	n the total kinetic energy as a 1	Find the loss in