1. Railway truck A has mass $5m$ and railway truck B has mass $3m$. The trucks are moving towards each other in opposite directions along the same straight track when they collide directly. Immediately before the collision the speed of A is u and the speed of B is $1.5u$

As a result of the collision, the trucks couple together.

(a) Find, in terms of u, the common speed of the trucks immediately after the collision.

(3)

(b) Find, in terms of m and u, the magnitude of the impulse exerted on B by A in the collision.

(3)

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Question 1 continued

(Total for Question 1 is 6 marks)