Question Number	Scheme	Marks
2(a)	Correct relationship between the speeds after the collision. v and $v+1$ OR $w-1$ and w	B1
	$(3m\times 1.5)+(m\times -1.5)=3mv+m(v+1)$ [Or $(3m\times 1.5)+(m\times -1.5)=3m(w-1)+mw$]	M1 A1
	Speed of $A=\frac{1}{2}$ (m s^{-1}) Speed of $B=\frac{3}{2}$ (m s^{-1})	A1 A1
		(5)
2(b)	For B: $\pm m(1.5--1.5)$ **OR** For A: $\pm 3m(0.5-1.5)$	M1 A1**ft**
	$3m$ (Ns)	A1
		(3)
		(8)
	NOTES	
(a) **B1** **M1** **A1** **A1** **A1** **(b)** **M1** **A1ft** **A1**	*speed* of B = 1 + *speed* of A . Must be seen **before** the CLM equation is used i.e. algebraic not numerical quantities Dimensionally correct CLM equation with correct number of terms. Allow consistent extra g 's or cancelled m 's. Ignore sign errors. Allow the use of 2 unknowns for speeds after. (M0 if same speeds) Correct equation in 1 unknown Correct speed of A Correct speed of B Dimensionally correct impulse-momentum equation using A or B with correct number of appropriate terms. Condone sign errors but must be difference of momenta. M0 if g is included. Correct unsimplified equation. Follow through their answer in (a),but if using B, terms must have same signs, if using A, terms must have opposite signs. Cao (must be positive)	