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	*speed* of B = 1 + *speed* of A . Must be seen **before** the CLM equation is used i.e. algebraic not numerical quantities
M1	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)
A1	Correct equation in 1 unknown
A1	Correct speed of A
A1	Correct speed of B
(b)	
M1	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.
A1ft	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.
A1	Cao (must be positive)