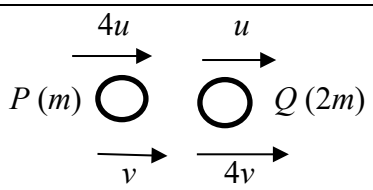
Question Number	Scheme	Marks
1(a)		
	CLM: $4mu + 2mu = mv + 2m \times 4v$	M1 A1
	$4v = \frac{8u}{3}$ (2.7u or better)	A1
		(3)
(b)	$\pm m(v - 4u)$ **OR** $\pm 2m(4v - u)$	M1 A1**ft**
	$\frac{10mu}{3}$ (3.3mu or better)	A1
		(3)
(c)	Opposite to the direction of motion	B1
		(1)
		(7)
	Notes for Question 1	
1(a)	M1 Correct number of terms, dimensionally correct, condone sign errors Allow even if they assume that both are moving with the same speed after the collision.	
	A1 Correct equation, allow cancelled m's or consistent extra g's	
	A1 Correct answer (must be positive as it's a speed) and a single term.	
1(b)	M1 Dimensionally correct imp-momentum equation (M0 if g is included), with correct terms, condone sign errors, but must be a difference of momenta and must be using EITHER m and $4u$ and their v_P OR $2m$ and u and their v_Q	
	A1**ft** Correct expression, in terms of m and u, follow their v_P or v_Q A0ft if they assume that both move with the same speed after the collision	
	A1 cao Must be positive as it's a magnitude	
1(c)	B1 Any clear equivalent	