Question Number	Answer	Mark
1(a)	$5mu - 3m \times 1.5u = (5m + 3m)v$ or $5mu - 3m \times 1.5u = -(5m + 3m)v$	M1 A1
	$\frac{u}{16}$, 0.0625u oe isw	A1 (3)
1(b)	$\pm 5m\left(\frac{u}{16} - u\right)$ **OR** $\pm 3m\left(\frac{u}{16} - -\frac{3u}{2}\right)$	M1 A1**ft**
	$\frac{75mu}{16}$, 4.6875mu oe isw	A1 (3)
		(6)
	Notes	
1(a)	M1: CLM with correct terms, condone sign errors, cancelled m's or consistent extra g's. Must have $(5m + 3m)v$ or $-(5m + 3m)v$ M0 if a 'u' is missing	
	A1: Correct equation	
	A1: Accept 0.063u or better. Must be positive and of the form ku, where k is a single decimal or fraction $\frac{p}{q}$, where p and q are positive whole numbers.	
1(b)	M1: Impulse-momentum, dimensionally correct with correct terms, condone sign errors, masses and velocities must be paired correctly Allow with their v from (a) provided their v is a multiple of u M0 if m is missing or g included or if m is used for the mass.	
	A1**ft**: Correct expression, ft on their answer to (a), allow to 2sf or better.	
	A1: Accept 4.7mu or better (must be positive) isw	