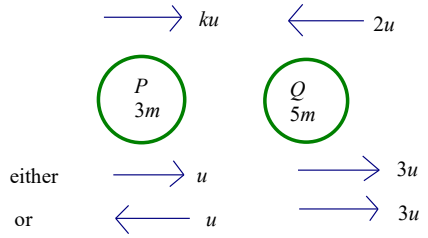
Q	Solution	Mark	Notes
1.			
(a)	$\pm 5m\left(3u-\left(-2u\right)\right)$	M1	Use of $I=m\left(v-u\right)$ seen or implied, with correct terms. Condone sign errors. M0 if g included
	$25mu$	A1	Must be positive
		(2)	
(b)	Use of CLM	M1	Or equal and opposite impulses. Requires all terms dimensionally correct. Condone sign errors.
	$3mku-10mu=3mu+15mu$ or $3mku-10mu=-3mu+15mu$	A1	Correct unsimplified equation for either case.
	$\Rightarrow k=\frac{28}{3}$ or $k=\frac{22}{3}$	A1	One correct value. Any equivalent form. Accept decimal to 1dp or better.
	Equation for second value	M1	Their equation from M1 above with the final direction of P reversed.
	Second value correct.	A1	Any equivalent form. Accept decimal to 1dp or better.
		(5)	
		[7]	