

Question number	Answer	Notes	Marks
9 (a) (i)	momentum = mass $\times$ velocity;	allow rearrangements and standard symbols e.g. $p = m \times v$ reject $m$ for momentum	1
(ii)	substitution and evaluation; e.g. ( $p =$ ) $0.039 \times 0.56$ ( $p =$ ) $0.022 \text{ (kgm/s)}$	$0.02184 \text{ (kgm/s)}$ allow $0.02 \text{ (kgm/s)}$ if supported by working	1
(iii)	use of conservation of momentum;  evaluation of total mass; evaluation of mass of truck;  e.g. $0.022 = m \times 0.26$ total mass = $0.084$ mass of truck = $(0.084 - 0.039 =) 0.045 \text{ (kg)}$	allow 'momentum before = momentum after' seen anywhere can also be implied from calculation  allow ecf from (ii) allow $0.0846... \text{ (kg)}$ allow $0.0456... \text{ (kg)}$	3
(b)	total mass (of system) is now greater; total momentum is the same as before;  velocity will be lower than before;	allow "momentum is conserved"  calculation of new velocity = $0.169... \text{ m/s}$ scores all 3 marks	3

Total for question 9 = 8 marks