

(ii)	<p>Attempt to find slope or gradient of line ; AND evaluation of value; matching unit; e.g. = $0.6/0.0018$ = 333 m/s</p>	<p>Δ seen or two lines from same axis seen or rise/run seen value in range of 310-350 allow 0.333 km/s 0.333 m/ms</p>	3
(iii)	<p>Any one specific variable from the experiment; e.g. hitting the block in the same place</p> <p>Use the same microphone/timer/wires</p> <p>Ensure there is no 'hammer bounce'</p>	<p>These must be specific to the experiment Accept same</p> <ul style="list-style-type: none"> • temperature • humidity • density • draughts • force • block <p>ignore</p> <ul style="list-style-type: none"> • 'keep everything the same' • use control variables • repeat experiment 	1
(iv)	<p>Any 2 suggestions from</p> <p>MP1. repeat the time readings (for each distance);</p> <p>MP2. measure the distance to the sensor of the microphone;</p> <p>MP3. use wider range of distance readings (<0.62 or >1.38);</p> <p>MP4. use intermediate distances (between points);</p>	<p>ignore imprecise suggestions e.g.</p> <ul style="list-style-type: none"> • 'be careful with timer' • 'change the distance' 	2

(Total for Question 3 = 12 marks)

Question number	Answer	Notes	Marks
8 (a)	momentum = mass × velocity;	Allow rearrangements and standard abbreviations $p = m \times v$	1
(b)	Equation; Substitution and rearrangement; Evaluation; e.g. $m_1 \times v_1 = m_2 \times v_2$ $10\,000 \times 4.5 / 1500$ $30(\text{m/s})$	 bald answer = 3 marks POT = -1	3

(Total for Question 8= 4 marks)