

Question number	Answer	Notes	Marks
5 (a)	substitution into given equation $v^2 = u^2 + (2 \times a \times s)$; evaluation of v^2 ; evaluation of v to 3sf or more i.e. 16.1 (m/s); e.g. $v^2 = u^2 + (2 \times a \times s)$ $v^2 = 0^2 + (2 \times 10 \times 13)$ $v^2 = 260$ $v = \sqrt{260} = 16.1 \text{ (m/s)}$	accept $mgh = 1/2mv^2$ accept use of $g = 9.8(1) \text{ m/s}^2$ giving $v = 16.0, 15.97$ etc.	3
(b)	any FIVE from: MP1 ball has weight; MP2 ball accelerates; MP3 drag increases (while accelerating); MP4 resultant force decreases; MP5 (so) acceleration decreases; MP6 drag = weight / resultant = 0 / forces balanced; MP7 terminal velocity/constant speed /acceleration=0;	allow 'has gravitational force' REJECT 'has gravity' REJECT 'balls slows down' allow 'air resistance' for 'drag'	5

Total for Question 5 = 8 marks