Question number	Answer	Notes	Marks
11 (a)	value of braking distance correctly read from graph; substitution into $v^2 = u^2 + 2as$; rearrangement; evaluation; e.g. braking distance = 78 m $0 = 35^2 + (2 \times a \times 78)$ $(a =) (-) 35^2 / (2 \times 78)$ $(a =) (-) 7.9$ (m/s^2)	allow 77-79 m allow ecf incorrect distance allow 7.75... - 7.95...(m/s^2)	4
(b)	any five from: MP1. thinking distance OR braking distance increases as (initial) speed increases; MP2. braking distance increases by a greater amount than thinking distance for the same increase in (initial) speed; MP3. thinking distance is (directly) proportional to (initial) speed; MP4. braking distance has a non-linear relationship with (initial) speed; MP5. idea that braking distance is proportional to (initial) speed squared; MP6. suitable use of data to justify thinking distance relationship; MP7. suitable use of data to justify braking distance relationship;	 e.g. gradient of braking distance graph larger than gradient for thinking distance e.g. when initial speed doubles, the braking distance is four times greater / eq. e.g. reading off thinking distance for two values of initial speed and showing they increase by the same factor e.g. reading off braking distance for two values of initial speed and showing they do not increase by the same factor	5

Total for Question 11 = 9 marks