Question		Marking details	Marks Available
(d)		N.B. There is no mark for Yes / No only. Comment regarding straight line, e.g. it's a straight line! (1) Mention of negative gradient. (1) Mention of positive intercept [accept clear implication, e.g. 'intercept as expected']. (1)	3
(e)	(i)	Large triangles used (should be close to the extremities of the lines) or 2 equivalent suitable points clearly indicated on each line or clearly implied by calculation [see below]. (1) Both gradients calculated correctly (ignore unit and significant figures). (2) Allow **ecf** for incorrect max/min lines. Example of clear implication [from graph on page 7]. Max gradient $= \frac{5.97 - 10.14}{1.00 - 0.00} = [-]4.17[\text{s}^2\,\text{m}^{-1}]$✓ Min gradient $= \frac{6.12 - 9.96}{1.00 - 0.00} = [-]3.84[\text{s}^2\,\text{m}^{-1}]$✓ N.B. No penalty for positive gradient here. Marking tips: First check: The value of m_{max} should be ~ [–]4.2 [$\text{s}^2\,\text{m}^{-1}$] and the value of m_{min} should be about [–]3.85 [$\text{s}^2\,\text{m}^{-1}$]. Candidates who have drawn lines which are too extreme may obtain >4.25 and <3.80. This is penalised in *(c)*, so apply **ecf**. Candidates who have drawn 'tram lines' will have two nearly identical values of ~[–]4.02. Again **ecf** should be applied.	3
	(ii)	Mean gradient correct (1) [expected value ~[–]4.01[5] $\text{s}^2\,\text{m}^{-1}$ but apply **ecf** from *(c)* and *(e)*(i)] (no sig fig penalty). % uncertainty correct (1) [expected value ~± 5%. – Allow 2 sig figs. Apply **ecf** from *(c)* and *(e)*(i)].	2
	(iii)	*g* calculated correctly (1) (by whatever means including using points from the line of **best** fit) and quoted to 1 or 2 d.p. (if answer in $\text{m}\,\text{s}^{-2}$). % difference calculated on the comparison with 9.81 $\text{m}\,\text{s}^{-2}$. (1) [Typical difference = 0.03 $\text{m}\,\text{s}^{-2}$ → 0.3%, apply **ecf**]. Comment on accuracy. (1) [Expected answer for ~ 0.3% difference is that the result is accurate]. **Alternative approach:** 1st mark as above (✓). Calculation of % uncertainty from *(e)*(ii), typical value 5% (✓). Comment that the accepted value of *g* is within the 5% uncertainty of the calculated value (✓).	3