

P3 S6 Mock 2008 Guide

QUESTION 1		
Code	Points to score	Marks
A ₁	Position of G recorded to 1 decimal place in cm and is 49.0 – 51.0 cm	½
A ₂	Time for 20 oscillations recorded to 2 decimal places and is 40.00 – 43.00 s	½ + ½
A ₃	T ₁ correctly calculated to 3 decimal places	½ + ½
A ₄	σ ₁ correctly calculated to 1 dp if the substitution is correct	½ + ½
A ₅	Time for 20 oscillations recorded to 2 decimal places and is 19.00 – 22.00 s	½ + ½
A ₆	T ₂ correctly calculated to 3 decimal places	½ + ½
A ₇	σ ₂ correctly calculated to 1 dp if the substitution is correct	½ + ½
A ₈	σ correctly calculated to 1 dp	½ + ½
		7½
B ₁	Time for 20 oscillations recorded to 2 decimal places and is 8.50 – 10.00 s	½ + ½
B ₂	T correctly calculated to 3 decimal places	½ + ½
B ₃	k correctly calculated to 1 dp if the substitution is correct	½ + ½
B ₄	Time for 20 oscillations recorded to 2 decimal places and is 12.00 – 13.00 s	½ + ½
B ₅	T correctly calculated to 3 decimal places	½ + ½
B ₆	k correctly calculated to 1 dp if the substitution is correct	½ + ½
B ₇	Average value of k correctly calculated to 1 dp	½ + ½
		7
C ₁	Initial position of the pointer recorded to 1 dp in cm	½
C ₂	Columnar table of: m, new position of pointer, e, time for 20 oscil, T and T ² - all (at least 4 → ½)	1
C ₃	Correct units for columns: kg, cm, m, s, s and s ² - all → 1 (at least 4 → ½)	1
C ₄	New position of pointer recorded to 1 dp in cm (or 3 dp in m), difference between consecutive value (3.0 – 5.0) cm or (0.030 – 0.050) m	@½
C ₅	e correctly calculated to 3 dp - all → 1 (at least 4 → ½)	1
C ₆	Time for 20 oscillations increasing (7.50 – 22.00)s & recorded to 2 dp, diff between consecutive values 1.00 – 3.00 s	@ ½
C ₇	T correctly calculated to 3 dp - all → 1 (at least 4 → ½)	1
	T ² correctly calculated to 2 or 3 dp consistently - all → 1 (at least 4 → ½)	1
		11½
D ₁	Title of the graph: <i>A graph of T² against e</i>	½
D ₂	Axes: Each drawn with an arrow in the increasing direction, each labeled with quantity and unit	½ + ½
D ₃	Scales: Uniform, each spanning at least ½ pg, demarcations marked, starting values indicated	½ + ½
D ₄	Points correctly plotted: no shading	@½
D ₅	Best fit : awarded if at least 4 points were correctly plotted	½
D ₆	Indication of triangle or equivalent for calculating s ₁ , covering all points	½
D ₇	s correctly calculated if the coordinates were correctly read and 3.9 ≤ s ≤ 4.2 s ² m ⁻¹ recorded to 1 or 2 decimal places	1 + ½

D ₈	σ correctly calculated if correct substitution is available and $9.5 \leq \sigma \leq 10.1 \text{ m s}^{-2}^{-1}$, recorded to 0 or 1 decimal place $\frac{1}{2} + \frac{1}{2}$	1
		9
<i>Total = 35</i>		