

FINAL MARK SCHEME AoN-L3-S6_A-P46-v7.0-URN:557 JUNE 2006

(Units in brackets are optional)

Question	Marks	For	Responses
Part A			
1a	2 marks	2	483(kcal) Accept any number that rounds to 480(kcal)
		1	For 297.3 recurring(kcal) seen rounded or unrounded for rye bread or complete correct method with one calculation error
1b	2 marks	2	$\frac{13}{40}$ or $\frac{1}{3}$ or $\frac{3}{10}$
		1	For 6.5×10^{-5} (g) or equivalent seen for the folic acid in orange juice or complete correct method with one calculation error
2a	1 mark	1	(£)14 195.80
2b	2 marks	2	(£)6 215.11 Accept (£)6 215 or (£)6 215.12
		1	For (£)7 226.8768 seen rounded or unrounded after two years or (£) 6 215.114048 seen rounded or unrounded or (£)1144.91875 rounded or unrounded seen or complete correct method with one calculation error
2c	2 marks	2	(£)144.92 Accept (£)145
		1	For (£)818.025 seen rounded or unrounded or truncated for petrol costs for 1 year or (£)68.16875 seen rounded or unrounded or truncated for petrol costs for 1 month or (£)1739.025 seen rounded, unrounded or truncated for annual cost or complete correct method with one calculation error
2d	1 mark	1	Complete check by estimation e.g. $(5 \times 9\,000 \times 80 \div 40 \div 100 \div 15) + [(750 + 150) \div 10] = 150$ accept follow through from 2c
2e	2 marks	2	1 339 (litres) Accept 1 340 (litres) or 1 300 (litres)
		1	For $(2.1 \times 10^{10}) \div (2.8 \times 10^7 \times 0.56)$ seen or equivalent or 1339.285714(litres) rounded or unrounded or truncated or complete correct method with one calculation error

3a	3 marks	3	(£)32.28
		2	For 14.24640599 rounded or unrounded or 15 (bags) seen or complete correct method with one calculation error
		1	For areas rounding to 5.30(m ²) seen for the area of the three circular plots of soil or area rounding to 5.70(m ²) for area to be gravelled
3b	2 marks	2	2.46m or equivalent with units or 2.45m to 2.47m from a scale drawing
		1	For 2.461552813 rounded or unrounded as far as 2.5 or 2.061552813 seen rounded or unrounded for the Pythagoras calculation or equivalent or complete correct method with one calculation error
3c	1 mark	1	C + P = 16 and 8.5C + 10.5P = 150
3d	2 marks	2	9 cornus shrubs AND 7 photinia shrubs
		1	For 9 cornus shrubs or 7 photinia shrubs or complete correct method with one calculation error
3e	1 mark	1	Substitution in the other equation seen
4a	3 marks	3	6 (hectares) Accept 6.01425 (hectares) rounded or unrounded
		2	For 60142.5(m ²) seen for the area or complete correct method with one calculation error
		1	For 240570 (mm ²) or 2405.7(cm ²) seen for the area of the land on the map or for at least three of the following actual dimensions correct: 270(m), 252(m), 135(m), 117(m)
4b	3 marks	3	'Yes' WITH supporting calculations to show that the height of the house will be 9.827196325 (metres) rounded or unrounded or truncated
		2	For calculations to show that the height of the house will be 9.827196325 (metres) rounded or unrounded or truncated
		1	For correct substitution into tan formula
4c	1 mark	1	(£)160.70 Accept (£)160.697888 rounded or unrounded or (£)160
4d	2 marks	2	6 (complete years) Accept 2010 or 5 (complete years) or 2009
		1	For (£)247192 seen for the second complete year or correct figure for a subsequent year or complete correct method with one calculation error
5a	2 marks	2	(£)18 640
		1	For correct substitution into the equation or (£)18 637.45657 seen rounded or unrounded
5b	2 marks	2	(£)24 500 or (£)24 497.44 or (£)24 499.98 Follow through from part a
		1	For (£) 6 862.56 or complete correct method with one calculation error

Part B			
6a	2 marks	2	Two correct statements eg Similarity - For each of the three years there was a low call waiting time Difference - The peak call waiting time varied
		1	For one correct statement
6b	1 mark	1	Title and labels on axes with units 'Call waiting time (s)' on x axis and 'Cumulative frequency (number of calls) on y axis
	1 mark	1	Suitable linear scales
	2 marks	2	Seven points plotted correctly using upper boundary of call waiting times
		1	For five or six points plotted correctly using upper boundary of call waiting times or seven correct heights plotted
	1 mark	1	Points joined correctly as curve or polygon
6c	2 marks	1	16(s) accept answers in range 15(s) - 17(s)
		1	Upper and lower quartiles shown clearly on graph Q_1 498.75 th Q_3 1492.5 th
6d	2 marks	2	5.73 (hours) or 5 hours 44 minutes
		1	For 20 615(s) or 343.5833 (mins) or 5.7263888 (hours) rounded or unrounded for calls switched to auto
6e	3 marks	3	317(s) Accept 317.3(s)
		2	For $\sum f(x) = 633\,047.5$ or 632 050 seen or 316.8(s) seen or 317.3170426(s) seen rounded or unrounded or complete correct method with one calculation error
		1	For 5 of 4848, 39882.5, 102 454.5, 260 421.5, 179 749.5, 45 691.5 seen or 4 800, 39 750, 102 250, 260 050, 179 550, 45 650 seen
6f	2 marks	2	(£)2 990 or (£)2 991.54 or (£)2 992
		1	For 8 778 seen for number of incoming calls or (£) 2 991.5424 rounded or unrounded seen or complete correct method with one calculation error

	Part A	34	
	Part B	16	
	Total	50	