

GCSE Mathematics Mark Scheme P-2 November 2008

5540F/2F					
Question		Working	Answer	Mark	Notes
1	(a)		20	1	B1 cao
	(b)		15	1	B1 cao
	(c)		4 circles on Fri $2\frac{1}{2}$ circles on Sat	2	B1 cao B1 cao
2	(a)		32	1	B1 cao
	(b)		127 marked	1	B1 cao
	(c)		4.4	1	B1 cao
	(d)		3.18 marked	1	B1 cao
3	(a)		Huntingdon	1	B1 cao
	(b)		3	1	B1 cao
	(c)		10 05	1	B1 cao
4	(a)		14	1	B1 cao
	(b)		6	1	B1 cao
	(c)		(Reflection)	1	B1 cao
	(d)		12	1	B1 cao
5	(i)		Cylinder	2	B1 cao
	(ii)		Cone		B1 cao
6			11.36	4	B1 cao
			22.99		B1 cao
			18.00		B1 cao (allow 18)

			91.82		B1 for 91.82 or f.t. from adding at least 3 item totals (62.46 + "11.36" + " 18.00")
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Question		Working	Answer	Mark	Notes
7	(a)		14	1	B1 cao
	(b)		-2	1	B1 cao
8	(a)		27	1	B1 cao
	(b)		4	1	B1 cao
	(c)		40	1	B1 cao
9	(a)		4.6	1	B1 cao
	(b)		$2 \rightarrow 2.4$	2	B1 for $2 \rightarrow 2.4$
	(i)		$10 \rightarrow 12$		B1 for $10 \rightarrow 12$ or $5 \times$ '(i)' ft
	(ii)				
10	(a)		$1.5 \rightarrow 2.2$ metres	1	B1 for $1.5\text{m} \rightarrow 2.2\text{m}$ oe or $4\text{ft } 10 \text{ inches} \rightarrow 7\text{ft}$ oe
	(b)	$3 \times (a) \rightarrow 5 \times (a)$	$4.5 \text{ m} \rightarrow 11 \text{ m}$	2	M1 for $3 \times (a) \rightarrow 5 \times (a)$ (units not needed but cannot be contradictory) A1 cao for $4.5\text{m} \rightarrow 11\text{m}$ oe or $14\frac{1}{2} \text{ ft} \rightarrow 35\text{ft}$ oe (units needed) Note: $5\text{m} = 500 \text{ cm} = 196.85 \text{ inches} = 16.4 \text{ ft}$

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Question		Working	Answer	Mark	Notes
11	(a) (b) (c)(i) (ii)		20 2.4 Robert	1 1 2	B1 for 19 to 21 B1 for 2.3 to 2.5 B1 for Robert with a correct conversion (may be evidenced on the graph) (B1 for 'Robert' with a valid explanation or James with a correct conversion) (may be evidenced on the graph) Note: 4m = 13 feet, 12 ft = 3.6m
12			(Enlargement)	2	B2 cao (B1 for 2 lines correct, or correct enlargement sf 3))
13		1.42 – 0.03	1.39	2	M1 for sight of 142 – 3 or 1.42 – 0.03 or 1420 – 30 A1 cao

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Question	Working	Answer	Mark	Notes
14	(a)	35%	1	B1 cao (accept 35)
	(b)	8	1	B1 cao
	(c)	$\frac{30}{100}$	$\frac{3}{10}$	2 M1 for $\frac{30}{100}$ or $\frac{15}{50}$ or $\frac{6}{20}$ or 0.3(0) seen A1 cao
	(d)	0.09	1	B1 cao
	(e)	$\frac{14}{100} \times 2000$	280	2 M1 for $\frac{14}{100} \times 2000$ oe A1 cao NB: 280% gets M1 A0
	(f)	$\frac{40}{2000} \times 100$	2	2 M1 for $\frac{40}{2000} \times 100$ oe A1 cao
15	(a)	6	2	M1 for 9 – 3 or 3 – 9 A1 cao
	(b)	$(7+6+8+4+5+9+7+3+6+7) \div 10$	2	M1 for $(7 + 6 + 8 + 4 + 5 + 9 + 7 + 3 + 6 + 7) \div 10$ A1 cao

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Question	Working	Answer	Mark	Notes
16	$\frac{28}{100} \times 85000$	23800	2	M1 for $\frac{28}{100} \times 85000$ oe OR a complete method, allow one arithmetic error A1 cao
17	$1.6 + 8.4$	10	2	B2 for 10 (B1 for sight of 1.6)
18	(a)	5	1	B1 cao
	(b)	11	1	B1 cao
	(c) $4t = 18$	4.5	2	M1 for subtracting 1 from both sides (or dividing by 4) A1 for 4.5 oe
	(d) $2w + 8 = 7$	$-\frac{1}{2}$	2	M1 for an intention to take $2w$ from both sides or take 8 from both sides A1 for $-\frac{1}{2}$ oe
19	(a)(i)	25	2	B1 cao
	(ii) $180 - 25 = '25'$	130		B1 ft for $155 - 'i'$
	(b) $180 - 130 = 50$ $y = \frac{1}{2}(180 - 50)$	65	2	M1 $\frac{1}{2}$ "(a)(ii)" or any complete correct method A1 ft from (a)(ii)

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Question	Working	Answer	Mark	Notes
20		(Net)	3	B3 for fully correct net (B2 for 3 or 4 out of 5 drawn faces (of 4 triangles and one quadrilateral) correct OR correct square and 4 isosceles triangles that together form the net of a pyramid) (B1 for 1 or 2 out of 5 drawn faces correct)
21		30	2	M1 for finding the middle value or indication of 0, 29, 29.5, 30.5, 31, 31.5, 32 or writing "10 th value" oe A1 cao
22	(a)	$180 \div 2$	2	M1 for $180 \div 2$ OR $180 \div 6 \times 3$ A1 cao
	(b)	160×2.5	2	M1 for 160×2.5 OR $160 \div 6 \times 15$ OR $160 \div 2 \times 5$ oe A1 cao SC: B1 for an answer of 399 to 405
23		5, 13, 29, 53, 85, 125	(85)	2 M1 for correct evaluation of at least 3 odd cases OR sequence of 5, (8), 13, (20), 29... seen OR the expression with $n = 9$ or 11 or 19 or 21 or ... substituted but not evaluated A1 for 85 or 125 or 365 or 445 or ... identified
24	(a)		1	B1 cao
	(b)		1	B1 for 25.5 or 25.4 $\dot{9}$

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Question		Working	Answer	Mark	Notes
25		$1 - (0.15 + 0.05 + 0.20 + 0.25)$	0.35	2	M1 for $1 - (0.15 + 0.05 + 0.20 + 0.25)$ A1 for 0.35 oe
26	(a)		3 plotted correctly	1	B1 ± 1 square
	(b)		Positive	1	B1 for positive (correlation)
	(c)		LOBF	1	B1 for line within guidelines; line goes from between (2,18) and (2,32) to between (16,78) and (16,90)
	(d)		$62 - 67$	1	B1 for $62 - 67$ OR ft from a single straight line graph of positive gradient ± 1 square
27		$\pi \times 6^2$ $12^2 - \pi \times 6^2$	30.9	4	M1 for 12^2 or 144 seen M1 for $\pi \times 6^2$ or 113. ... seen M1 (dep on M2) for “ 12^2 ” – “ $\pi \times 6^2$ ” A1 for $30.88 - 31$

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Question		Working							Answer	Mark	Notes	
28	(a)	x	-1	0	1	2	3	4	5	3, -6, -5	2	B2 cao for all 3 (B1 for any 1 or 2 correct)
	(b)	y	3	-2	-5	-6	-5	-2	3	Quadratic graph	2	B2 for a fully correct graph OR B1 for all 7 points ft on (a) plotted correctly ± 1 sq B1 for a smooth curve through all 7 of their plotted points depending on at least B1 in (a)
	(c)	Draw $y = -3$							0.3, 3.7	2	B1 for 0.2 – 0.4 or ft from graph ± 1 square B1 for 3.6 – 3.8 or ft from graph ± 1 square (SC: If no marks earned then B1 for line $y = -3$ drawn)	
29									Within guide	2	B2 for line at least 2cm long within inner guideline B1 for line at least 2cm long completely or partially outside inner guidelines but within outer guidelines or line within inner guidelines of length less than 2cm or at least 3 relevant points within inner guidelines or 2 pairs of relevant intersecting arcs within inner guidelines. NB : Ignore any additional lines or drawings	

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Question	Working	Answer	Mark	Notes
30	24 48 72 36 72	72	2	M1 for listing at least 1 multiple of 24 AND 1 multiple of 36 A1 cao OR M1 for 2, 2, 2, 3 (prime factors of 24) OR 2, 2, 3, 3 (prime factors of 36) (may be seen in factor tree or in repeated division) A1 cao