GCSE Mathematics Mark Scheme P-1 November 2008

5540F/1F

Question		Working	Answer	Mark	Notes
1	(a)		3	1	B1 cao
	(b)		Cat	1	B1 cao
	(c)		22	1	B1 cao
2	(a)		9374	1	B1 cao
	(b)		sixty two thousand five hundred	1	B1 cao
	(c)		80	1	B1 for 80, accept 8 tens, tens
	(d)		2200	1	B1 cao
	(e)		7000	1	B1 cao
3	(a)		7	1	B1 for 7 ± 2mm
	(b)			1	B1 for correct position ± 2mm
	(c)			1	B1 for all parts within ± 2mm, use overlay
4	a(i)		1, 4	2	B1 cao
	(ii)		3, 0		B1 cao
	(b)		C correct	1	B1 cao

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Question		**Working**	**Answer**	**Mark**	**Notes**
5	a(i)		Kilometres	2	B1 (accept km)
	(ii)		Litres		B1 for litres, (accept kilolitres, m^3 or appropriate abbreviations)
	b(i)		50	2	B1 cao
	(ii)		4		B1 cao
6	(a)		Two of 3, 5, 9, 11	1	B1 cao
	(b)		5, 10 or 6,9	1	B1 cao
	(c)		3 or 6	1	B1 for 3 or 6
	(d)		8 or 16	1	B1 for 8 or 16
	(e)		e.g. "$5^2 = 25$"	1	B1 for correct explanation, e.g. $5^2 = 25$ or $3^2 = 9$ and $4^2 = 16$ so 10 cannot be a square number or showing diagramatically that 10 is not a square number
7	(a)		Trapezium	1	B1
	(b)		60	1	B1 for 60 ± 2
	(c)		obtuse	1	B1
8	(a)		Correct diagram	1	B1 for correct diagram, accept squares drawn at either end shaded or unshaded. Ignore internal lines.
	(b)		17, 21	1	B1 cao
	(c)		41	1	B1 cao

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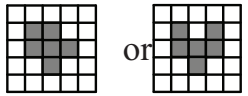
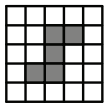
Question		**Working**	**Answer**	**Mark**	**Notes**
9	(a)	3×60	1.80	2	M1 for 3×60 or $60 + 60 + 60$ or 3 x 45 or 180 seen A1 (accept 1.8) SCB1 for £1.35
	(b)	$2.70 + 0.45 + 0.60 = 3.75$ $5 - 3.75 = 1.25$	1.25	3	M1 for $2.70 + 0.45 + 0.60$ or 3.75 seen (note: working could be in pence) M1(dep) for $5 -$ "3.75" A1 cao SCB2 for 125
	(c)	$60 \div 3 = 20$ $20 \times 2 = 40$	40	2	M1 for $60 \div 3$ or 60×2 or sight of 20 or 120 A1 cao
10	(a)			1	B1 cao
	(b)			1	B1 cao
11	(a)		$n - 3$	1	B1 for $n - 3$ or $1n - 3$ or $-3 + n$ (condone use of N)
	(b)		$2n$	1	B1 for $2n$ or n x 2 or 2 x n or $n2$ or $n + n$ (condone use of N)

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Question		**Working**	**Answer**	**Mark**	**Notes**
12	(a)	10+20+10+20	60	2	M1 for 10+20+10+20 A1 cao
	(b)	10 × 20	200	2	M1 for 10 × 20 A1 cao
13	(a)		40	1	B1 cao
	(b)		19	1	B1 cao
	(c)		5	1	B1 cao
14	(a)		26	2	M1 for 4 × 5 + 3 × 2 A1 cao
	(b)		Odd	1	B1 cao
15	(a)		"angles on a line sum to 180°"	1	B1 for angles on a line sum to 180°, 180, 120+50=170 etc
	(b)	360 – (70 + 130 + 100)	60	2	M1 for 360 – (70 + 130 + 100) A1 cao

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16	(a)		92 and 16	2	B1 for 92 B1 for 16
	(b)		38	1	B1 cao
	(c)		Italy	1	B1 cao
	(d)	$\frac{9}{30}$	$\frac{3}{10}$	2	B2 cao (B1 for $\frac{9}{30}$)
	(e)	48:32	3:2	2	B2 cao (B1 for sight of 48, 32 or two numbers in correct proportion) SC B1 for 2:3

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Question		**Working**	**Answer**	**Mark**	**Notes**
17	(a)	$12 \div 3 \times 2$ (=8) 8×40 Alternative: 3 tins = $40 \times 2 = 80$ 12 tins = 80×4	3.20	3	M2 for $40 \times 12 \div 3 \times 2$ or better (inc. adding 8 lots of 40p) (M1 for using 2 of the 3 operations or 8 seen) A1 cao OR M1 for 3 tins = 40×2 (=80) M1 for "80" × 4 A1 cao [SC: if M0 scored: B2 for digits 32, or B1 for 480 or 4.80]
	(b)	$\frac{9}{12} \times 100$	75	2	M1 for $\frac{9}{12}$ oe A1 cao
	(c)	$\frac{15}{100} \times 20 = 3$ OR 10% = 20 ÷ 10 = 2 5% = 2 ÷ 2 = 1 15% = 2 + 1 = 3 20 – 3 Alternative: 20×0.85	17	3	M1 for $\frac{15}{100} \times 20$ oe or a correct method to work out 10% and 5% of 20, or 2 and 1 seen A1 for 3 cao A1 ft for 20 – "3" dependent on M1 scored **Alternative:** B1 cao for 85 or 0.85 seen M1 for $\frac{\text{"100-15"}}{100} \times 20$ or "1-0.15" × 20 A1 ft for a correct solution of $\frac{\text{"100-15"}}{100} \times 20$ or "1-0.15" × 20 or 17 dependent on M1 scored SC (for both alternatives) B2 for £3
18		$360° \div 90 = 4$ Sector angles: (H=80); S=60; C=100; T=120	Angles drawn, labelled	3	M1 for $360 \div 90$ or $80 \div 20$ or 4 seen or one angle correct in pie chart ($\pm 2°$) or table A1 for any two angles drawn in pie chart A1 for fully correct and labelled pie chart

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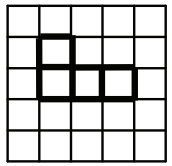
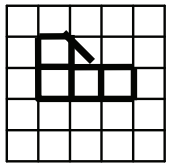
Question		**Working**	**Answer**	**Mark**	**Notes**
19	(a)		$3bc$	1	B1 for $3bc$ (accept $3cb$ or $bc3$ or $cb3$ or $3\times b\times c$ oe, but $7bc - 4bc$ gets 0)
	(b)		$2x + 5y$	2	B2 for $2x+5y$ (accept $x2+y5$ or $2\times x + 5\times y$ or $x\times 2 + y\times 5$) [B1 for $2x$ or $5y$ seen; accept $2\times x$, $x2$, $5\times y$, $y5$, etc.]
	(c)		m^3	1	B1 cao
	(d)		$6np$	1	B1 for $6np$ oe (accept $6pn$, $np6$, $pn6$ but NOT $6\times p\times n$)
	(e)		$5(m + 2)$	1	B1 for $5(m+2)$ or $5(2+m)$. Accept $(5–0)(m+2)$ or $(3+2)(m+2)$
20			(B), D, C, A, F, E	3	B3 all correct (B2 for 3 or 4 correct B1 for 1 or 2 correct)
21			 OR 	2	B2 For either answer (B1 for an "L" shape with one dimension correct) Internal lines need not be drawn. All 3-D drawings get B0
22	(a)			2	B2 correct reflection (B1 correct reflection in the line $x=k$, $k\neq 0$)
	(b)		Rotation 90° about the centre (0,0)	3	B1 for rotation B1 for 90° (anticlockwise) or 270 clockwise or ¼ turn (anticlockwise) or ¾ turn clockwise B1 for (0,0) or O or origin NB: a combination of transformations gets B0

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Question		**Working**	**Answer**	**Mark**	**Notes**
23		$48 \div 8 = 6$ $6 \times 5 - 6 \times 3 = 12$	12	3	M1 for $48 \div$ "5+3" M1 (dep) for "6" × 5 or 30 seen or "6" × 3 or 18 seen or "6" × 2 A1 cao
24	(a)		No time period Non-exhaustive response boxes Labels too vague	2	B2 for TWO aspects from: "no time period", "response boxes not exhaustive (restricted range of responses)", "Labels on response boxes are too vague" (B1 for ONE aspect only)
	(b)	How many times did you go to the cinema last month? 0 | 1-2 | 3-5 | >5	Includes time period and proper response boxes	2	B1 for inclusion of time period (this may be implied by the labels to the response boxes) B1 for at least 3 correctly labelled response boxes (non-overlapping) [NB: response boxes need not be exhaustive]
25				2	M1 for correct intersecting arcs A1 for correct angle bisector SC: if no marks, B1 for line within guidelines
26		$x + 30 + 2x + 3x = 180$ $6x + 30 = 180$ $6x = 150$	25	3	M1 for $x + 30 + 2x + 3x$ or $6x+30$ seen or 180 – 30 or 150 seen M1 (dep) for $6x+30=180$ or better or $\frac{"180 - 30"}{6}$ A1 cao