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Mark Scheme (Results)

March 2010

GCSE

GCSE Mathematics (Modular) - 2381
Paper: 5383H/10

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5383H/10					
Question		**Working**	**Answer**	**Mark**	**Notes**
1		$\frac{15}{100} \times 120$	18	2	M1 for $\frac{15}{100} \times 120$ oe or for 10%= 12 and 5%= 6 with intention to add A1 cao
2	(i)		30	2	B1 for 30 cao
	(ii)		alternate angles		B1 for alternate angles (or Z angles), dep on 30 in (i) **or** co-interior angles, dep on 30 or 180 – 150 in (i) **or** allied angles, dep on 30 or 180 – 150 in (i) **or** corresponding angles (or F angles) **and** angles on a straight line (= 180), dep on 30 or 180 – 150 in (i) **or** corresponding angles (or F angles) **and** (vertically) opposite angles, dep on 30 in (i) **or** any other fully correct reason
3	(a)		–3, (–1), 1, 3, (5), 7	2	B2 for all 4 values (B1 for any 2 correct)
	(b)		Correct line	2	B2 cao for correct line between $x = -2$ and $x = 3$ (B1 ft for plotting 4 points correctly or for a straight line with gradient 2 or for straight a line passing through (0, 1))

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Question		**Working**	**Answer**	**Mark**	**Notes**
4		$\frac{1}{2} \times 3 \times 4 \times 7$	42	2	M1 for $\frac{1}{2} \times 3 \times 4 \times 7$ or for 7 as part of a triple product A1 cao
5	(a)		$x^2 - 5x$	1	B1 cao
	(b)		$2(2y + 3)$	1	B1 cao
	(c)		$(x + 6)(x - 6)$	1	B1 cao
6	(a)		270000	1	B1 cao
	(b)		1.2×10^8	2	M1 for 12×10^7 or $12 \times 10^{9-2}$ or 1.2×10^n, where n is a positive integer, or for $4\,000\,000\,000 \times 0.03$ or for 120 000 000 oe seen A1 cao

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Question	**Working**	**Answer**	**Mark**	**Notes**
7	$90 - \frac{180 - 40}{2}$	20	3	M2 for a complete correct method e.g. $90 - \frac{180 - 40}{2}$ or $\frac{1}{2}(180 - (360 - 90 - 90 - 40))$ (M1 for angle *OAC* or angle *OBC* = 90° or 90 seen or angle *AOB* = 140° or 180 − 40 or 140 seen or angle *CAB* or angle *CBA* = 70° or 70 seen (these could be marked on the diagram or implied by calculation)) A1 cao
8	$\frac{3x(x+2)}{(x+2)(2x-3)}$	$\frac{3x}{2x-3}$	3	M1 for $3x(x+2)$ M1 for $(x+2)(2x-3)$ A1 cao

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Question	**Working**	**Answer**	**Mark**	**Notes**
9	$10x = 4.272727....$ $1000x = 427.272727....$ $990x = 423$ $x = \frac{423}{990}$ $\frac{423}{990} = \frac{47}{100}$ OR $100x = 42.727272...$ $10x = 4.272727...$ $110x = 46.9999...$ $46.9999... = 46+0.9999...$ Let $y = 0.9999...$ $10y = 9.9999...$ $9y = 9$ $y = 1$ so $46.9999... = 47$ $110x = 47$ $x = \frac{47}{110}$	Correct proof	3	M1 for a valid method involving two correct recurring decimals that, when subtracted, would result in a terminating decimal, **and** subtracting e.g. $100x = 42.7272...$, $x = 0.42727...$ and subtracting A1 for $99x = 42.3$ or $990x = 423$ or $110x = 47$ or $\frac{42.3}{99}$ or $\frac{423}{990}$ A1 for completion of proof, including "$\frac{423}{990}$" $= \frac{47}{110}$ OR M1 for a valid method involving two correct recurring decimals that, when added, would result in a recurring decimal with 9s recurring, **and** adding e.g. $100x = 42.7272...$, $10x = 4.2727...$ and adding or $1000x = 427.2727...$, $100x = 42.7272...$ and adding A1 for $110x = 46.9999...$ or $1100x = 469.9999...$ A1 for completion of proof. This must include proof that $46.9999... = 47$ or $469.9999... = 470$ (it is not sufficient to merely state that $46.9999... = 47$ or that $469.9999... = 470$)

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