MARK SCHEME for the May/June 2010 question paper

for the guidance of teachers

0580 MATHEMATICS

0580/11 Paper 11 (Core), maximum raw mark 56

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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Qu.	Answers	Mark	Part Marks
1	10 18 (am)	1	
2	**(a)** 41% 0.43 $\dfrac{4}{9}$	1	accept decimals
	(b) $0.3 < \dfrac{1}{3}$ only	1	
3	$\dfrac{3}{5}$	2	**W1** for $\dfrac{21}{35}$ **M1** $1 - \dfrac{14}{35}$ oe **SC1** answer $\dfrac{2}{5}$
4	$y = 4x - 3$ oe	2	**W1** for $y = 4x + j$, or $y = kx - 3$ If zero, **SC1** for $4x - 3$ $k \neq 0$
5	287°	2	**W1** for 73 or 107 marked in correct position **at P** or **M1** 107 + 180
6	**(a)** –7	1	
	(b) 13	1	
7	10	2	**M1** for $\dfrac{\text{their } (17000 - 15300)}{17000}$ **W1** for $\dfrac{15300}{17000} \times 100$ or answer 90(%)
8	**(a)** $x + x + 3 + 2x - 7 = 52$ or better	1	
	(b) 14	2ft	**W1** for $4x$ or 56 seen Follow through their **(a)** if linear and equal to 52 for 1 or 2 marks.
9	2.5(0) or 2.503…. to 2.504	3	**M1** for $\pi r^2 = 19.7$ soi **M1** dep for $19.7 \div \pi$
10	**(a)** p^7	1	
	(b) $4q^6$	2	**W1** for $4q^n$ or kq^6 $k \neq 0$
11	18	3	**M1** for exterior angle $180 - 160$ implied by 20 (could be on diagram) **M1 dep** for $360 \div$ their 20
12	**(a)** 0.01 or $\dfrac{1}{100}$	1	
	(b) 1	1	
	(c) 7	1	

13	$(x =)$ 4 $(y =) - 1$	3	**M1** for multiplying and subtracting or adding as appropriate. (allow errors in arithmetic operations) or any other correct methods. **A1** for one correct variable
14	**(a)** 90°	1	
	(b) 72°	1	
	(c) 90°	1	
	(d) 36°	1	Ft $180 - (54 +$ their **(c)**)
15	**(a)** $\begin{pmatrix} 4 \\ -9 \end{pmatrix}$	1, 1	
	(b) $\begin{pmatrix} 0 \\ 28 \end{pmatrix}$	1, 1	
16	lines of symmetry 1 0	1, 1	
	order rotational 1 4	1, 1	
17	**(a) (i)** 0.3 oe	1	
	(ii) 18	1	Follow through their **(a)(i)** × 60
	(b) horizontal line to (30,3)	1	
	line from (30,3) to (45,0) OR from their $(x,3)$ to (their $x + 15$, 0)	1ft	
18	**(a)** $y(3y - 7x)$ final answer	1	
	(b) $4p^2 + 17pr + 2r^2$ final answer	3	**W2** for 2 correct terms in answer. **W1** for 1 correct term in answer. OR **M1** for $4p^2 + 5pr$ and **M1** ind for $12pr + 2r^2$
19	**(a) (i)** 12	1	
	(ii) 120 ft	2	**M1** for attempt to multiply their **(a)(i)** by 10 soi.
	(b) (i) 625	1	
	(ii) 0.0625	1ft	or their **(b)(i)** ÷ 10 000