Mark scheme

Equation of a straight line

Mathematics 0580 · Questions from Paper 1 and Paper 2

Total marks

31

MARKS FOR EACH QUESTION

1	2	3	4	5	6	7	8	9	10	Total
1	2	2	3	3	3	4	4	4	5	**31**

Question 1 [1]

1	The line crosses the y-axis below zero not above oe	**1**	

Question 2 [2]

2	**(a)**	(0, 5)	**1**	
	(b)	– 1	**1**	

Question 3 [2]

3	$(4,3)$	**2**	**B1** for each or **M1** for $3 = 2x - 5$ or better

Question 4 [3]

4	**(a)**	(0, –3)	**1**	
	(b)	4	**1**	
	(c)	$y = 4x$ [+0]	**1FT**	**FT** $y =$ *their* (b)x for numerical gradient only

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Question 5 **[3]**

5(a)	5	**1**	
5(b)	$(-\frac{12}{5}$ oe, 0)	**2**	**M1** for $5x + 12 = 0$

Question 6 **[3]**

6	$[y =]\ 12x - 26$ final answer	**3**	**M1** for $\frac{10 - -2}{3 - 2}$ oe **M1** for correct substitution of (2, –2) or (3, 10) into $y = (their\ m)x + c$ oe

Question 7 **[4]**

7(a)	$[y =]\frac{1}{2}x + 3$ final answer	**2**	**B1** for $\frac{1}{2}x + c$ or **B1** for $mx + 3$ where $m \neq 0$
7(b)	$(-6, 0)$	**2**	**B1** for $(-6, j)$ or $(k, 0)$ or **M1** for $0 = their\frac{1}{2}x + 3$ or better

Question 8 **[4]**

8	**(a)** 4 **(b)** $y = -2x + 9$ oe	1 3	 **M1** $\frac{5 - 3}{2 - 3}$ oe **M1** substitution of a point into their equation If **M1** only then **A1**ft for $y =$ "m"$x +$ "c" used correctly with their numeric values

Question 9 **[4]**

9	**(a)**	$[y =]\ 2x + 3$ cao	**3**	**M2** for correct unsimplified equation or **B1** for gradient = $(11 - 3) \div (4 - 0)$ or better and **B1** for $c = 3$
	(b)	$-\frac{1}{2}$ oe	**1FT**	$-1 \div$ *their m*

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Question 10 **[5]**

10(a)	For correct ruled tangent and [a =] 1, [b =] 2	**2**	**B1** for correct ruled tangent or both values correct without a correct tangent
10(b)	[y =] $5 - 3x$	**3**	**3FT** *their* **(a)** provided $m < 0$, $c \neq 0$ **B1** for $(their\ -3)x + c$ or **M1** for correct $\frac{\text{rise}}{\text{run}}$ for *their* line **B1** for $mx + c$ where c is the correct intercept for *their* graph, $m \neq 0$

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