Mark scheme

Factorising and completing the square

Mathematics 0580 · Questions from Paper 1, Paper 2 and Paper 4

Total marks

29

MARKS FOR EACH QUESTION

1	2	3	4	5	6	7	8	9	10	Total
3	2	2	2	2	2	3	3	4	6	**29**

Question 1 **[3]**

1(a)	$2(5+8w)$	**1**	
1(b)	$4t(3x-2t)$	**2**	**B1** for answer $4(3tx-2t^2)$ or $t(12x-8t)$ $2(6tx-4t^2)$ or $2t(6x-4t)$

Question 2 **[2]**

2	$xy(4x-5y)$ final answer	**2**	**B1** for $y(4x^2-5xy)$ or $x(4xy-5y^2)$ or $xy(4x-5y)$ seen then spoilt

Question 3 **[2]**

3	$5m(3k^2-4m^3)$ final answer	**2**	**B1** for $5(3k^2m-4m^4)$ or $m(15k^2-20m^3)$ or for $5m(3k^2-4m^3)$ with one error in a number

Question 4 **[2]**

4	$(x+2)(y+3)$ final answer	**2**	**B1** for $y(x+2)+3(x+2)$ or $x(y+3)+2(y+3)$

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Question 5 **[2]**

5	$(2x+1)(x-3)$	**2**	**B1** for $(2x+a)(x+b)$, where $ab=-3$ or $a+2b=-5$

Question 6 **[2]**

6	$[a=]$ 64 $[b=]$ −8	**2**	**B1** for each or for both $(x-8)^2$ and $x^2-16x+64$

Question 7 **[3]**

7(a)	$(p-q)(p+q)$ final answer	**1**	
7(b)	$\frac{7}{2}$ oe	**2**	**M1** for $2\times(p+q)=7$ or for $(2+q)^2-q^2=7$ or $p^2-(p-2)^2=7$

Question 8 **[3]**

8	$a=2$ $b=3$ $c=20$	**3**	**B2** for any two correct For c, FT 2 + *their a* × *their* $(b)^2$ or **B1** for $b=3$ nfww OR **B2** for $2(x+3)^2-20$ or **M1** for $(x+3)^2$ seen or for $ax^2+2abx+ab^2-c$ or for $a=2$ and one of $2ab=12$ and $ab^2-c=-2$

Question 9 **[4]**

9	$\frac{1-p}{1+t}$ oe final answer	**4**	**B2** for $(p-1)(t-1)$ oe or **B1** for $p(t-1)-(t-1)$ or $t(p-1)-(p-1)$ **B1** for $(1-t)(1+t)$ oe

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Question 10 **[6]**

10(a)	1, 2, 3, 6, 9, 18	**2**	**B1** for a list with one error or one omission
10(b)	$(y + 5)(3 - x)$ final answer	**2**	**M1** for $y(3 - x) + 5(3 - x)$ or for $3(y + 5) - x(y + 5)$ or for correct answer seen and spoilt
10(c)	$x = 2$, $y = 13$ or $x = 1$, $y = 4$	**2**	FT *their* **(b)** for **M1** **M1** for *their* $3-x=a$ and *their* $y+5=b$ where $ab=18$ and a, b integers

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