EXPAND, FACTORISE AND SIMPLE ALGEBRA GCSE MATHS EDEXCEL PASTPAPER ANSWERS

1.

(a)		$3y + 7x + 3$	1	B1 cao
(b)		$2x(x - 2)$	2	B2 for $2x(x - 2)$. Accept $2x(x + -2)$. (B1 for $x(2x - 4)$ or $2(x^2 - 2x)$ or $2x$(linear expression in x) or $(x - 2)$(linear expression in x)
(c)	$11-3x-6$	$5-3x$	2	M1 for expansion of $-3(x + 2)$ A1 cao
(d)	$3x^2+7x-18x-42$	$3x^2 - 11x - 42$	2	M1 for 4 terms correct with or without signs or 3 out of exactly 4 terms correct (the terms may be in an expression or table) **OR** $x(3x+7)-6(3x+7)$ or $3x(x - 6) + 7(x - 6)$ A1 cao

2.

(a)		$5(2a + 1)$	1	B1 for $5(2a + 1)$ or $5\times(2a + 1)$ or $(2a + 1)5$ or $5(1 + 2a)$, etc
(b)	$5x + 35 + 3x - 6$	$8x + 29$	2	M1 for $5x + 35$ or $3x - 6$ or $8x$ or 29 A1 for $8x + 29$
(c)		$3ab(a + 2b)$	2	B2 for $3ab(a + 2b)$ (B1 for correct partial factorisation $a(3ab + 6b^2)$ or $b(3a^2 + 6ab)$ or $3a(ab + 2b^2)$ or $3b(a^2 + 2ab)$ or $ab(3a + 6b)$ OR $3ab(ma + 2b)$ or $3ab(a + nb)$ where $m \neq 1$, $n \neq 2$) [B0 for partial factorisation using only an integer e.g. $3(a^2b + 2ab^2)$]

3.

(a)		$x^2 - 3x - 40$	2	M1 for 3 terms correct (out of no more than 4 terms) from x^2, $5x$, $-8x$ and -40 or 4 terms x^2, $5x$, $8x$ and 40 (ignoring signs) A1 for $x^2 - 3x - 40$ [Note: $x^2 - 3x + 40$ and $x^2 + 3x - 40$ with no working get M0A0]
(b)		$(x + 4)(x - 4)$	1	B1 for $(x + 4)(x - 4)$ oe

4

(a)		$2e - f$	2	M1 (implied) for $2e$ or $-f$ A1 oe
(b)		$6x + 10$	2	M1 for $2 \times 3x$ $(= 6x)$ or 2×5 $(= 10)$ A1 cao

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5.

(a)		$2x^2 + 7x + 3$	2	M1 for 4 terms correct with or without signs or 3 out of exactly 4 terms correct (the terms may be in an expression or table) A1 cao
(b)		$4x(x + 2y)$	2	M1 for $4x(ax + by)$, a & b integers or $ax(x + 2y)$ or any expression with brackets which multiplies to give $4x^2 + 8xy$ A1 cao

6.

estion	Working	Answer	Mark	Notes
(a)		$5y + 4$	2	M1 for $3\times y - 3\times 2$ or $2\times y + 2\times 5$ A1 cao
(b)		w^2	1	B1 cao
(c)		$5(x + 4)$	1	B1 cao

7.

		3	2	M1 for substitution eg $2^3 - 5$ or $8 - 5$ A1 cao

8.

(a)	$(2a + b)(x - y)$		2	M1 for $2a(x - y)$ or $b(x - y)$ or $x(2a + b)$ or $y(2a + b)$ A1 for $(2a + b)(x - y)$ oe
(b)		$2n^2 - 2n + 13$	3	B1 for $n^2 + 4n + 4$ or $n^2 - 6n + 9$ (need not be simplified) M1 (dep on B1) for '$n^2 + 4n + 4$' + '$n^2 - 6n + 9$' A1 cao

9.

(a)		$3x + 6$	2	M1 for attempted expansion of the bracket eg $3\times x$ and 3×2 seen or $3x + k$ or $kx + 6$ A1 for $3x + 6$
(b)		$6xy(2x^2 - 3y)$	2	M1 or $6xy$ (two terms involving x and/or y) or correct partial factorisation by taking out two from 6 (or 3 or 2) or x or y A1 cao
(c)	$2x^2 + 8x - 3x - 12$	$2x^2 + 5x - 12$	2	M1 for 3 out of 4 correct terms with correct signs, or all 4 terms ignoring signs A1 cao
(d)		$10\,x^7y^5$	2	B2 for $10\,x^7y^5$ (B1 for product of two of 5×2 oe, x^{4+3}, y^{3+2} ignore × signs)

10.

Question	Working	Answer	Mark	Notes
(a)		$8e - 5f$	2	B2 for $8e - 5f$ oe (B1 for $8e$ or $-5f$)
(b)		$2(2t + 5)$	1	B1 cao
(c)	$3 + 2p - 2$	$1 + 2p$	2	M1 for $2 \times p$ and 2×-1 oe within at most 3 terms seen A1 cao
(d)	$x(a + b) + y(a + b)$	$(a + b)(x + y)$	2	M1 for $x(a + b)$ or $y(a + b)$ or $a(x + y)$ or $b(x + y)$ seen A1 for $(a + b)(x + y)$ oe 2-bracketed expression