EXPANDING AND FACTORISING QUADRATICS

Pearson Edexcel - Thursday 8 November 2018 - Paper 2 (Calculator) Foundation Tier

1.

26	(a)	$10x^2 - 11x - 6$	M1	for 3 out of no more than 4 terms correct with correct signs **or** 4 correct terms ignoring signs	$10x^2 - 15x + 4x - 6$ NB: $10x^2 - 11x$ and $-11x - 6$ are indicative of 3 correct terms.
			A1	cao	
	(b)	$(x + 1)(x + 3)$	M1	for $(x \pm 1)(x \pm 3)$ **or** for $(x + a)(x + b)$ where either $ab = 3$ or $a + b = 4$	
			A1	cao	

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2.

24	(a)		± 6	M1	for one value (6 or −6) or $\sqrt{36}$ or an embedded answer eg $2 \times 6^2 = 72$
				A1	± 6
	(b)	$6x^2 - 4x + 3x - 2$	$6x^2 - x - 2$	M1	for at least 3 terms correct out of a maximum of 4 from expansion, or 4 terms correct ignoring signs.
				A1	cao
	(c)		$(x + 3)^2$	B1	for $(x + 3)^2$ or $(x + 3)(x + 3)$

Pearson Edexcel – Specimen 1 - Paper 3 (Calculator) Foundation Tier

3.

26		$(x - 1)(x + 4)$	M1 $(x \pm 1)(x \pm 4)$ A1 $(x - 1)(x + 4)$ oe

OCR Thursday 07 November 2019- Morning (Non-Calculator) Foundation Tier

4.

18		$(x + 4)(x + 5)$	M2	**M2** for $(x + 4)$ and $(x + 5)$ or **M1** for $(x + a)$ and $(x + b)$ where $ab = 20$ or $a + b = 9$ or $x(x + 4) + 5(x + 4)$ or $x(x + 5) + 4(x + 5)$ If **M0** scored **SC1** for x + 4 = 0 and x + 5 = 0	For M2 or M1 condone omission of final bracket .
		-5 and -4 nfww	B1	**STRICT FT** *their* factors dep on two brackets in factors. If 0 scored **SC1** for answers ±5 and ±4	

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5.

15	(a)	$3x^2 + xy - 2y^2$ final answer	3	**M2** for $3x^2 - 2xy + 3xy - 2y^2$ oe or **M1** for two correct terms	Accept e.g. 3yx May be seen in a table for **M1**
	(b)	$c = 4$ $d = -1$	5	**M4** for $3d + 20 = 17$ oe or **M3** for $6 + c = 10$ or $3d + 5c = 17$ or $6x + cx = 10x$ or **M2** for $6x + 3d + cx + 5c$ oe or **M1** for $6x + 3d$ or $cx + 5c$ OR **B3** for $c = 4$ and **B2** for $d = -1$	Accept e.g. c5
	(c)	2, 5 nfww	3	**M2** for $(x - 2)$ and $(x - 5)$ or **M1** for $(x + a)$ and $(x + b)$ where $ab = 10$ or $a + b = ^-7$ **B1** ft their quadratic factors If 0 scored **SC1** for answer ±2 and ±5	

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6.

12	a	$4cd - 20c$ final answer	2	**M1** for $4cd$ or $-20c$ in final answer	Condone $4dc$ $4cd + -20c$ scores **M1** only Do not accept eg $4 \times c \times d$
	b	$3x^2 - 10x - 8$ final answer	2	**M1** for at least three of the following terms correct $3x^2 - 12x + 2x - 8$	May be seen in a table $-10x$ implies both $-12x$ and $2x$
	c	$x \le 8$	2	Mark final answer **M1** for $3x \le 22 + 2$ or $3x < 22 + 2$ or $3x = 22 + 2$ or $x > 8$ or $x = 8$ If **0** scored, **SC1** for answer $x \le \dfrac{20}{3}$ or $x \le 6\dfrac{2}{3}$	Condone $x < 8$ for 2 marks Condone 8 on answer line for **M1**

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7.

18	a	$(x - 43)(x + 43)$ final answer	1		Condone omission of final bracket
	b	1400	2	**M1** for $(57 + 43)(57 - 43)$ FT *their* quadratic factors in (a) or better or **B1** for 3249 or 1849 **seen**	**M1** for FT factors $(x + 43)(x + 43)$ or $(x - 43)(x - 43)$ only

8.

	$x^2 - 8x - 8x + 64$	M1	allow one error or omission terms may be seen in a grid	
	$x^2 - 16x + 64$	A1	Ignore fw eg if attempting to solve Do not ignore fw if attempting to simplify	

Additional Guidance	
$x^2 - 16x\ (+ k)$ $k \neq 64$	M1A0
$x^2 - 8x + 64$	M1A0
$x^2 - 16x + 64 = -15x^3 + 64$	M1A0
$x^2 - 8x + 8x + 64$ (one error)	M1A0
$x^2 + 8x + 8x + 64$ (one error)	M1A0
$x^2 - 6x + 8x + 64$ (two errors)	M0A0
$x^2 + 64$ (two errors)	M0A0

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