

Expanding and Factorising Quadratics

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NAME _____ DATE _____

- 1 Which one of these expressions is equivalent to $x^2 + 7x + 12$?  NON-CALCULATOR 1 MARK

A $(x + 12)(x + 1)$	B $(x + 3)(x + 4)$	C $(x - 3)(x - 4)$	D $(x + 2)(x + 5)$
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Write down the letter of your answer.

- 2 Expand and simplify $(3x - 2)(4x - 5)$  NON-CALCULATOR 2 MARKS

- 3 Multiply out the brackets and simplify $(3t - 4)^2$  NON-CALCULATOR 2 MARKS

- 4 Factorise $w^2 - 4w - 32$  NON-CALCULATOR 2 MARKS

- 5 $(t - 6)(t + a) = t^2 - 9t + 18$  NON-CALCULATOR 2 MARKS

Calculate the value of a .

- 6 Show, by expanding and simplifying, that $(4x - 7)(x - 6) + 3x(x + 1) - 7(x^2 - 4x + 4)$ is equal to an integer.  NON-CALCULATOR 4 MARKS

7 $(x + a)(x - 4a) \equiv x^2 + bx - 16$

 NON-CALCULATOR 3 MARKS

Find the two possible values of b .

8 s and t are positive integers.

 NON-CALCULATOR 3 MARKS

$(m - s)(m + t)$ expands and simplifies to $m^2 - km - 80$, where k is a positive integer.

Work out the smallest possible value of k .

9 Factorise $x^2 - 121$.

 NON-CALCULATOR 1 MARK

A $(x - 11)^2$	B $x(x - 121)$	C $(x + 11)^2$	D $(x + 11)(x - 11)$
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Write down the letter of your answer.

10 Expand and simplify $(5x + 1)(4x + 7)$

 NON-CALCULATOR 2 MARKS

1	Option B	2	$12x^2 - 23x + 10$
3	$9t^2 - 24t + 16$	4	$(w + 4)(w - 8)$
5	-3	6	The x^2 terms and the x terms both cancel, leaving the integer 14.
7	$b = -6$ or $b = 6$	8	2
9	Option D	10	$20x^2 + 39x + 7$