

1		$(4x+1)(x-3) = 4x^2 - 12x + x - 3 (= 4x^2 - 11x - 3)$ $(4x+1)(5x+6) = 20x^2 + 24x + 5x + 6 (= 20x^2 + 29x + 6)$ $(x-3)(5x+6) = 5x^2 + 6x - 15x - 18 (= 5x^2 - 9x - 18)$		3	M1 for multiplying 2 brackets with at least 3 out of 4 terms correct
		$(5x+6)(4x^2 - 11x - 3) = 20x^3 - 55x^2 - 15x + 24x^2 - 66x - 18$ $(x-3)(20x^2 + 29x + 6) = 20x^3 + 29x^2 + 6x - 60x^2 - 87x - 18$ $(4x+1)(5x^2 - 9x - 18) = 20x^3 - 36x^2 - 72x + 5x^2 - 9x - 18$			M1 (dep) for multiplying the product of the first 2 brackets (ft from the 1 st stage) by the 3 rd bracket, and getting at least 3 out of 6 or 4 out of 8 terms correct
			$20x^3 - 31x^2 - 81x - 18$		A1
		Alternative $20x^3 + 24x^2 - 60x^2 + 5x^2 - 15x + 6x - 72x - 18$			B2 for at least 6 out of 8 terms correct (B1 for 4 or 5 out of 8 correct terms)
			$20x^3 - 31x^2 - 81x - 18$		A1
Total 3 marks					

2	c	$x^2 - 5x + 2x - 10$			M1 for any 3 correct terms or for 4 out of 4 correct terms ignoring signs or $x^2 - 3x \dots$ or for $\dots - 3x - 10$
			$x^2 - 3x - 10$	2	A1

3	(a)	$m^2 - 8m + 5m - 40$		2	M1 for any 3 correct terms or for 4 out of 4 correct terms ignoring signs for $m^2 - 3m \dots$ or for $\dots - 3m - 40$
			$m^2 - 3m - 40$		A1

4	(a)	$6x^2 + 9x - 3x^2 - 5x$		2	M1 expansion with at least 3 correct terms (must see for example, $6x^2$ and not just $3x \times 2x$) (can assume that no sign in front of a number is a + if terms written in a list or table)
		<i>Working not required, so correct answer scores full marks (unless from obvious incorrect working)</i>	$3x^2 + 4x$		A1 or $4x + 3x^2$ or $x(3x + 4)$ or $x(4 + 3x)$

5		$4x(3x+1) = 12x^2 + 4x$ or $4x(2x-3) = 8x^2 - 12x$ or $(3x+1)(2x-3) = 6x^2 - 9x + 2x - 3 (= 6x^2 - 7x - 3)$		3	M1 for expanding two of the three factors, allow one error
		$(12x^2 + 4x)(2x-3) = 24x^3 - 36x^2 + 8x^2 - 12x$ oe $(8x^2 - 12x)(3x+1) = 24x^3 + 8x^2 - 36x^2 - 12x$ oe $4x(6x^2 - 7x - 3) =$ eg $24x^3 - 28x^2 \dots$ oe			M1 (dep)ft for expanding by the third factor, allow one error (some may do the expansion in one stage and will get to $24x^3 - 36x^2 + 8x^2 - 12x$ without firstly expanding two factors)
		<i>Working required</i>	$24x^3 - 28x^2 - 12x$		A1 dep on M1 isw correct factorisation eg $4(6x^3 - 7x^2 - 3x)$ $x(24x^2 - 28x - 12)$ $4x(6x^2 - 7x - 3)$ do not isw incorrect simplification eg $24x^3 - 28x^2 - 12x = 6x^3 - 7x^2 - 3x$ gets M2A0
Total 3 marks					

6	(c)		$12t^2 - 8t$	2	B2 B1 for $12t^2$ or $-8t$
	(d)	$5x^2 + 20x - 2x - 8$		2	M1 for 4 correct terms (ignoring signs) or 3 correct terms with correct signs. or $5x^2 + 18x + \dots$ or $\dots + 18x - 8$
			$5x^2 + 18x - 8$		A1

7	(b)	$2x(x-5) = 2x^2 - 10x$ or $2x(x-3) = 2x^2 - 6x$ or $(x-5)(x-3) = x^2 - 5x - 3x + 15 (= x^2 - 8x + 15)$		3	M1 for multiplying $2x$ by a bracket with both terms correct or the 2 brackets with at least 3 out of 4 terms correct or at least 2 out of 3 terms correct
		$(2x^2 - 10x)(x-3) = 2x^3 - 6x^2 - 10x^2 + 30x$ or $(2x^2 - 6x)(x-5) = 2x^3 - 10x^2 - 6x^2 + 30x$ or $2x(x^2 - 5x - 3x + 15) = 2x^3 - 10x^2 - 6x^2 + 30x$ or $2x(x^2 - 8x + 15) = 2x^3 - 16x^2 + 30x$			M1 (dep) for multiplying the product of $2x$ and the 1 st bracket (ft from the 1 st stage) by the 2 nd bracket and getting at least 3 out of 4 terms correct or multiplying the product of the 2 brackets (ft from the 1 st stage) by the $2x$, and getting at least 3 out of 4 or 2 out of 3 terms correct
			$2x^3 - 16x^2 + 30x$		A1
8	(a)	$8x^2 + 20x - 6x^2 + 9x$		2	M1 3 correct terms or all 4 terms condoning incorrect signs
			$2x^2 + 29x$		A1
9	(a)		$3c^4 + 12c^3$	2	B2 for $3c^4 + 12c^3$ (B1 for $3c^4$ or $12c^3$)
10	(a)	$n^2 - 6n + 4n - 24$		2	M1 for any 3 correct terms or for 4 out of 4 correct terms ignoring signs or for $n^2 - 2n \dots$ or for $\dots - 2n - 24$
			$n^2 - 2n - 24$		A1 oe
11	(a)	$2y - 4y + 8 - y^2$		2	M1 for 3 correct terms or for 4 correct terms ignoring signs or $\dots - 2y - y^2$ or $8 - 2y - \dots$
			$8 - 2y - y^2$		A1 Any order but simplified
12	(a)		$4x^2 - 20x$	1	B1 $\text{or } -20x + 4x^2$
13	(b)	$x^2 + 5x - 7x - 35$		2	M1 for any 3 correct terms or for 4 out of 4 correct terms ignoring signs or for $x^2 - 2x \dots$ or for $\dots - 2x - 35$
		Correct answer scores full marks (unless from obvious incorrect working)	$x^2 - 2x - 35$		A1 oe Ignore solutions/roots if correct expansion seen