Mark scheme   H   UNIT 2

This is a non-calculator test

The following marks are awarded for each question.

B	Unconditional accuracy mark
M	Method mark – the correct method must be shown but there may be an arithmetic error; the sight of the value given in brackets implies the award of the method mark
A	Accuracy mark – unless the question specifies that working **must** be shown then the sight of the correct answer implies the award of full marks (unless the answer clearly comes from incorrect working)
C	Communication mark
P	Process mark to show correct process for problem solving. Any other process of a similar standard to achieve an accurate result is acceptable to achieve this mark
FT	Incorrect values may be **followed through** from one step to the next **provided** that the correct method is seen in each step and the only errors are arithmetic. This is shown in mark schemes by putting a number in inverted commas
OE	Or equivalent answer mark

This Higher assessment may include a low step question that may not appear in the text books as it is assumed knowledge. It is included here to reflect the content of GCSE assessments.

Q	Answer	Mark	Comment
1a	$8x^2 - 12x$	B1	
1b	$23x - 13$	M1	for $20x - 10 - 3 + 3x$ (allow one error)
		A1	
1c	$14x^2 - 33x - 5$	B2	B1 for $14x^2 - 35x + 2x - 5$ with either three terms correct or all terms ignoring signs
3	$x = \dfrac{y + 4b}{9a}$ or $x = \dfrac{y}{9a} + \dfrac{4b}{9a}$	M1	for $y + 4b = 9ax$ or $\dfrac{y}{9a} = x - \dfrac{4b}{9a}$
		A1	

5	$11x^2 - 23x - 14$	P1	for $(3x - 5)(4x + 1) - (x + 3)^2$ OE
		P1	for $12x^2 - 20x + 3x - 5$ or $\pm(x^2 + 6x + 9)$
		A1	
7	30, 90, 270, 810	B2	B1 for two or three correct
9	21	P1	for $4r - 2$ or for at least three correct terms in seq Q
		P1	for $4r - 2 = 145 - 3r$ or for at least 16 correct terms in either sequence
		P1	for correct process to isolate r, e.g. $4r + 3r = 145 + 2$ or for two correct sequences up to and including the 21st term (82)
		A1	accept a different letter in place of r

11	$3c^8$	B2	(B1 for $3c^n$ or ac^8)
13	$2n^2 - 2n + 1$	P1	for 2nd differences = 4 or $2n^2$ seen
		P1	for 1, 5, 13, 25 − 2, 8, 18, 32 = (−1, −3, −5, −7) or $2n^2 - 2n + c$
		A1	
15	$49 - 9x^2$ OE	B2	B1 for $-9x^2 + 21x - 21x + 49$ OE

Question	Topic	Step	Marks
1a	Multiplying a single term over a bracket	6th	1
1b	Multiplying a single term over a bracket	6th	2
1c	Expanding products of two binomials	9th	2
3	Rearrange formulae to change the subject	8th	2
5	Translate simple situations or procedures into algebraic expressions or formulae	9th	3
7	Recognise and use other sequences	9th	2
9	Deduce expressions to calculate the nth term of linear sequences	8th	4
11	The laws of indices	8th	2
13	Recognise and use other sequences	11th	3
15	Expanding products of two binomials	10th	2