

## **Mark Scheme**

Q1.

Question number	Working	Answer	Additional Guidance	Mark
b		10.5	B1	1
c	$x^2 - 11x + 4x - 44$	$x^2 - 7x - 44$	M1 for 3 correct terms OR for 4 correct terms (ignoring signs) OR for $x^2 - 7x - \dots$ OR for $\dots - 7x - 44$ A1	2

Q2.

Question number	Working	Answer	Additional guidance	Mark
(a)	$12h + 15 + 12h^2 - 14h$	$12h^2 - 2h + 15$	M1 for three out of four including correct signs OR four without correct signs A1	(2)
(b)	$4 + 5 = 6m - 2m$ $9 = 4m$	2.25 oe	M1 for correctly isolating number and letter terms A1	(2)

Q3.

Question number	Working	Answer	Additional Guidance	Mark
a		$16m - 10m^2$	M1 for $16m$ OR - $10m^2$ A1 accept $-10m^2 + 16m$	2

Question number	Working	Answer	Additional Guidance	Mark
b	$y^2 - 6y + 3y - 18$	$y^2 - 3y - 18$	M1 for 3 correct terms OR for 4 correct terms (ignoring signs) OR for $y^2 - 3y - \dots$ OR for $\dots - 3y - 18$ A1	2

Q4.

Question number	Working	Answer	Additional guidance	Mark
a	$20w - 12w^2 - 15w$	$5w - 12w^2$	M1 for expanding bracket correctly A1	(2)
b	$7x - 11 = 9 \times 5$ $7x = 45 + 11$ $x = 56 \div 7$	8	M1 for complete correct method A1	(2)

Q5.

Question number	Working	Answer	Additional guidance	Mark
a	$9k + 14 - 4(3k - 6)$ $9k + 14 - 12k + 24$ $-3k + 38$	$38 - 3k$	M1 for correct expansion with correct signs A1	(2)

Question number	Working	Answer	Additional guidance	Mark
b	$(w + 4)(w - 5)$ $w^2 + 4w - 5w - 20$	$w^2 - w - 20$	M1 for three correct terms out of four terms with correct signs, or four correct terms regardless of signs A1	(2)

Question number	Working	Answer	Additional guidance	Mark
d	$\begin{aligned} 7x + 1 &= 5(2x + 5) \\ 7x + 1 &= 10x + 25 \\ -25 + 1 &= 10x - 7x \\ -24 &= 3x \end{aligned}$	$x = -8$	M1 for multiplying both sides by 5 correctly M1 (dep) for correctly isolating letter and number terms on each side A1	(3)

Question number	Working	Answer	Additional guidance	Mark
e		1	B1	(1)

Question number	Working	Answer	Additional guidance	Mark
f	$\frac{z^7}{z^2}$	$z^5$	M1 for any correct first step to simplify using index laws A1	(2)

Q6.

Question number	Answer	Mark
	A - CORRECT ANSWER B - Incorrect sign on both 1 and 6 C - Incorrect sign on the 1 D - Incorrect sign on the 6	1

Q7.

Question number	Working	Answer	Additional Guidance	Mark
a		$8y^2 (5x - 2y^2)$	B2 fully correct  (B1 for a correct partial factorisation with at least two elements outside the bracket eg. $4y (10xy - 4y^3)$ etc. OR the fully correct factor $(8y^2)$ outside the bracket with a two-term expression inside the bracket)	2

Question number	Working	Answer	Additional Guidance	Mark
b	eg. $x^9 \times x^n = x^5$	-4	M1 for any correct first step to simplify using index laws A1 accept $x^{-4}$	2

Q8.

Question number	Answer	Mark
	C - $(x - 8)(x + 8)$	(1)

Q9.

Question number	Answer	Mark
	A - $(x - 2)(x + 12) = x^2 + 10x - 24$ B - $(x + 2)(x - 12) = x^2 - 10x - 24$ C - CORRECT ANSWER D - $(x - 4)(x + 6) = x^2 + 2x - 24$	(1)

Q10.

Question number	Answer	Mark
	A - Subtracts 34 then square roots B - CORRECT ANSWER C - Subtracts 34 and then halves D - Adds 34 but then halves	1

Q11.

Question number	Working	Answer	Additional guidance	Mark
		$7n - 6$ oe	M1 for $7n$ A1	(2)

Q12.

Question number	Working	Answer	Additional guidance	Mark
		$31 - 4n$	M1 for $-4n$ A1 Accept: $27 - 4(n - 1)$	(2)

Q13.

Question number	Answer	Mark
	A – CORRECT ANSWER B – Subtracts terms in $p$ and $q$ C – Subtracts terms in $p$ D – Subtracts terms in $q$	1

Q14.

Question number	Working	Answer	Additional Guidance	Mark
a	$11 - 4 = 7$ $7 - 4 = 3$ $3 - 4 = -1$ $-1 - 4 = -5$	-5	B1	(1)

Question number	Working	Answer	Additional Guidance	Mark
b	$3 \times 1 - 7 = -4$ $3 \times 2 - 7 = -1$ $3 \times 3 - 7 = 2$ $3 \times 4 - 7 = 5$	-4, -1, 2, 5	M1 for at least two correct terms A1	(2)

Question number	Working	Answer	Additional Guidance	Mark
c	<p>7, 15, 23, <b>31</b>, 39, 47, 55, 63, 71, 79, 87, 95, <b>103</b></p> <p>4, 13, 22, <b>31</b>, 40, 49, 58, 67, 76, 85, 94, <b>103</b></p>	103	<p>M1 for a correct sequence that reaches 3 digits</p> <p>M1 for both sequences correctly reaching 3 digits or for '31' + 72</p> <p>A1 with evidence of correct working</p> <p>If no marks are scored, award SC:B1 for 31 as answer with no evidence of incorrect working</p>	(3)

Q15.

Question number	Working	Answer	Additional Guidance	Mark
a		-31	B1	1

Question number	Working	Answer	Additional Guidance	Mark
b	$1^2 + 4 \times 1 = 1 + 4$ $2^2 + 4 \times 2 = 4 + 8$ $3^2 + 4 \times 3 = 9 + 12$	5, 12, 21	<p>M1 for a correct method to find at least 2 terms (can be implied by at least two correct terms)</p> <p>A1</p>	2

Question number	Working	Answer	Additional Guidance	Mark
c	<p>4, 11, 18, 25, 32, 39, 46, 53, ...</p> <p>9, 14, 19, 24, 29, 34, 39, 44, ...</p>	39	<p>M1 for at least 5 correct terms in one sequence</p> <p>M1 for at least 5 correct terms in both sequences, one of which must reach 39</p> <p>A1</p>	3

Q16.

Question number	Working	Answer	Additional guidance	Mark
c		$8n + 1$	M1 for $8n + k$ where $k \neq 1$ A1	(2)

Q17.

Question number	Working	Answer	Additional Guidance	Mark
a		$10n - 3$	M1 for $10n$ A1	2

Question number	Working	Answer	Additional Guidance	Mark
b		1	B1	1

## **Unit 4**

### **Mark Scheme**

Q1.

<b>Question number</b>	<b>Working</b>	<b>Answer</b>	<b>Additional guidance</b>	<b>Mark</b>
		[correct perpendicular bisector drawn]	B1 for two correct pairs of intersecting arcs B1 for correct perpendicular bisector	(2)

(QU25 LMA11/01, Oct 2021)

Q2.

<b>Question number</b>	<b>Working</b>	<b>Answer</b>	<b>Additional guidance</b>	<b>Mark</b>
		Bisector drawn	B1 correct pair of intersecting arcs B1 correct bisector	(2)

(QU27 LMA11/01, June 2021)

Q3.

<b>Question number</b>	<b>Working</b>	<b>Answer</b>	<b>Additional Guidance</b>	<b>Mark</b>
		Correct bisector with construction arcs	B1 for correct pair of intersecting arcs drawn B1 for correct bisector drawn	2

(QU30 LMA11/01, Oct 2023)

Q4.

Question number	Working	Answer	Additional Guidance	Mark
		[Correct bisector drawn]	B1 for a correct pair of interesting arcs B1 for a correct bisector	(2)

(QU24 LMA11/01, June 2022)

Q5.

Question number	Working	Answer	Additional Guidance	Mark
		Correct triangle drawn	B2 for correct triangle drawn from arcs that intersect with overlay (B1 for correct 6cm arc from A OR correct 8cm arc from B) NB. accurate triangle with no arcs score B0	2

(QU23 LMA11/01, June 2023)

Q6.

Question number	Working	Answer	Additional Guidance	Mark
		Bisector through correct arcs	B1 for correct bisector drawn B1 for correct intersecting arcs shown	2

(QU22 LMA11/01, Oct 2022)