

M1.

- (a) 6, 9, 12, 15
or difference of 3
or $3n$ or $2n$ seen

M1

$(n +) 2n + 3$
or $3n + 3$ or $3(n + 1)$
or $3 \times 100 + 3$
oe

M1dep

303

A1

- (b) $\times 2 + 3$

B1

[4]

M2.

- (a) $2n + 19$

B1

- (b) **Alternative method 1**

$4a - 9$

B1

$8a - 21$

ft 2 x their $(4a - 9) - 3$ correctly simplified

B1ft

7

7 scores B1B1B1

ft correct solution of their $(8a - 21) = 35$

B1ft

Alternative method 2

19

B1

11

*ft (their $19 + 3$) $\div 2$ correctly evaluated***B1ft**

7

*7 scores B1B1B1**ft (their $11 + 3$) $\div 2$ correctly evaluated***B1ft****Additional Guidance**

7 in working with a different final answer

e.g. 19, 11, 7, 5 with answer 5

B1B1B0

Accept embedded answers

[4]**M3.**

(a) 51

B1(b) $123 - 2$ or 121or 11^2 seen**M1**

11

A1**Additional Guidance** $11 \times 11 + 2$ (= 123) or $11^2 + 2$ (= 123) embedded answer with or without an incorrect answer**M1A0** $\sqrt{123} = 11.09, 11$ or $\sqrt{123} = 11$ **M0A0**

T & I follow scheme

[3]**M4.(a)** $8 \times 5 - 2 \times 4^2$ (=) 8

B1 $8 \times 5 - 2 \times 4^2$ or 8

B2

(b) 19

B1

(c) $2n^2 + 2n - 2n^2$ or $2n(n + 1 - n)$

B1

[4]

M5.(a) 16

B1

24 and 32

ft their 16 + 8 and their 24 + 8

B1ft

(b) 56

B1

[3]

M6.

(a) 20 and 'add 3', 'increases by 3' or $3n + 2$
oe B1 for either answer

B2

(b) $6n + 1$

oe B1 for $6n$ or $6 \times n$ or $n \times 6$.

Do not accept $n6$ but $n6 + 1$ is B1

Accept other letters

B2

[4]

M7.

(a) 16

B1 Diagram showing 6 or 7 tables in a row with evidence of counting edges or people on the diagram
or
Calculation leading to 16 eg $7 + 7 + 2$
or
(4) (6) (8) 10 12 14 (16)

B2

(b) Arrangement with exactly 12 tables in rows that will seat exactly 30 that has exactly one row of four tables and no single table. Eg

One row of 6 and one row of 4 and one row of 2

One row of 5 and one row of 4 and one row of 3

B2 Arrangement with exactly 12 tables in rows that will seat [28, 32] that has exactly one row of four tables and no single table. Eg
One row of 4 and two rows of 3 and one row of 2 (32 people)

or

Arrangement with exactly 12 tables in rows that will seat exactly 30 people that does **not** have exactly one row of four tables or no single tables. Eg

Two rows of 5 and one row of 2

Three rows of 4

or

Arrangement with exactly 12 tables some not in rows that will seat exactly 30 people that has exactly one row of four tables and no single table

One 2 by 2 square, one row of 4 and two rows of 2

B1 Arrangement with [11, 13] tables that will seat [26, 34] people

that may or may **not** have exactly one row of four tables or no single table. Eg

One row of 4 and two rows of 3 and two single tables

Four rows of 3

One row of 4 and three rows of 3

One row of 4 and three rows of 2 and one single tables

B3

[5]

M8. $2 \times 16 + 4$

or $32 + 4$ or 36

or $16 + 20$

or $2 \times$ their $36 + 4$

or $72 + 4$

or their $36 + 40$ or 76

M1

36 and 76

A1

Additional Guidance

32 and 68 without working (from $2 \times$ their $36 + 4$) M1 A0

36 and 72 M1 A0

[2]

M9.(a) 17 and 21

B1

(b) $4n + 1$

oe

B1 $4n (\pm k)$

B2

Additional Guidance

$4 \times n + 1$ is B2

$4 \times n (+ k)$ is B1

(c) $4n + 1 = 53$ or $4n = 52$

M1

13

A1

Alternative method 1

$(53 - 1) \div 4$

oe

eg $1 + 4 + 4 + 4 + 4 + 4 + 4 + 4$
 $+ 4 + 4 + 4 + 4 + 4 + 4 (= 53)$

M1

13

A1

Alternative method 2

Counts up in 4s to within 4 of 53

*oe**allow one error or omission*

M1

13

A1

Additional Guidance

5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49

Answer 12

is M1A0

5, 9, 13, 17, 25, 29, 33, 37, 41, 45, 49

Answer 12

is M1A0

5, 9, 13, 17, 21, 24, 28, 32, 36, 40, 44, 48

Answer 12

is M1A0

[5]

M10.(a) 6

B1

(b) Subtract 5

oe

Accept $-5n + 36$

B1

Additional Guidance

number – 5

B1

$n - 5$

B1

Going down in 5s

B1

Take 5

B1

The first number – 5

B0

$n = -5$

B0

$-5n$

B0

(c) –4

B1

Additional Guidance

negative 4

B1

minus 4

B1

(d) True

False

False

*B1 each***B3****[6]****M11.(a)** $2700 \div 180$

or 15 seen

*oe***M1**

Beams = 30

or Posts = 16

A1

Beams = 30

and Posts = 16

*ft their 15 only if M1A0**SC1 for Beams = 16 and Posts = 30***A1ft****Additional Guidance**

ft only from M1A0:

ft their 15 + 1 for number of posts

ft their 15 × 2 for number of beams

(b) 5×40 or 200or 9×21 or 189**M1**

SC1 for 465

A1

Additional Guidance

465 (mixed up the beams and the posts)

SC1

[5]

M12.(a) 75

B1

(b) $(27 - 5) \div 2$ *Condone omission of brackets*

M1

11

A1

3

*ft (their $11 - 5) \div 2$ if A0 awarded**SC1 for 0.75**SC1 for 24.5 **and** 22*

B1ft

Alternative Method 1

$$2x + 5 = 27$$

M1

$$11 \text{ or } 2(2x + 5) + 5 = 27 \text{ oe}$$

$$\text{or } (27 - 15) \div 4$$

A1

3

A1

Alternative Method 2

Two fully correct trials eg any two of

$$u_1 = 1, u_2 = 7, u_3 = 19$$

$$u_1 = 2, u_2 = 9, u_3 = 23$$

$$u_1 = 4, u_2 = 13, u_3 = 31$$

$$u_1 = 5, u_2 = 15, u_3 = 35$$

M1

Fully correct trial with first term 3 ie $u_1 = 3, u_2 = 11, u_3 = 27$

M1dep

3

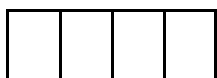
A1

[4]

M13.(a) 10

B1

(b) Correct pattern drawn



B1

(c) +3 seen or implied
eg (4, 7, 10) 13 or 16

or $10 + 3 + 3 + 3$

or $6 \times 3 + 1$

or $13 + 7 - 1$

M1

19

A1

[4]