



## GCSE Foundation/Higher 13

*Algebra*

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Mark scheme



22 minutes



19 marks

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*Sequences*

**M1.** (a) 37

**B1**

(b)  $16 + a$

$$(127 - a) \div 2$$

**B1**

2 x their  $(16 + a) + a$

$$32 + 3a, 2(16 + a) + a$$

**M1**

2 x their  $(32 + 3a) + a = 127$

$$\text{oe } 64 + 7a = 127$$

**M1**

$(a =) 9$

**A1**

**Alt**

Evidence of multiplying 8 by 2 and adding any number

*Evidence of subtracting a number from 127  
and dividing by 2*

**M1**

Evidence of multiplying their answer by 2 and adding **the same** number

*Evidence of subtracting the same number from their  
answer and dividing by 2*

**M1**

Refined attempt

**M1**

$(a =) 9$

**A1**

**[5]**

**M2.** S, A, N

-1eeoo

**B3**

**[3]**

**M3.**     -2, 1, 6

*-1 each error or omission.*

*Ignore extra terms*

*$1^2 - 3$ ,  $2^2 - 3$ ,  $3^2 - 3$  is B1*

**B2**

**[2]**

**M4.**     (a)   20

**B1**

(b)   3 - 5

*or -2*

**M1**

*(their - 2) ÷ 2*

**M1**

*-1*

*SC2   - 1 × 2 + 5 (=3)*

**A1**

**[4]**

**M5.**     (a)   (i)   5, 9, 13

*-1 each error or omission*

*B1 for 1, 5, 9 or 9, 13, 17*

**B2**

(ii)   no and valid reason

*eg   121 is in the sequence*

*(all) terms are odd*

*122 is even*

*$121 \div 4$  not integer*

*note: "no" can be implied*

**B1**

(b)    $3n + 1$  oe

*B1 for  $3n + c$  or  $kn + 1$*

*B1 for  $n3 + 1$  unless notation already penalised*

*ignore fw*

**B2**

**[5]**

