

Question Number	Answer	Notes	Marks
4	(a) $2 \times 4 = 8$  (b) $S_2 = 2a + d = 4 \times 5$  $d = 4$  (c) $25\text{th term} = a + 24d = 8 + 24 \times 4 = 104$	B1   M1A1 A1   M1A1	(6)

Notes

(a)

B1 for 8 seen

(b)

**Alt 1**M1 for  $S_2 = 2a + d$  or  $S_2 = 2 \times 8 + d$  or  $2 \times 8 + d = 2 \times 2(2 + 3)$  oe seen with their  $a$ .This must be an attempt at a **complete method** to find  $d$ .A1 for a fully correct method to find  $d$ .A1  $d = 4$ **Alt 2**

By comparing coefficients

$$\left\{ \frac{n}{2}(2a + (n-1)d) = 2n(n+3) \Rightarrow 2a + dn - d = 4n + 12 \Rightarrow 16 - d + dn = 12 + 4n \Rightarrow d = 4 \right\}$$

M1 for setting  $\frac{n}{2}(2a + (n-1)d) = 2n(n+3)$ A1 for a correct expressions as far as substituting the correct value for  $a$  to give:

$$16 - d + dn = 12 + 4n$$

A1  $d = 4$ 

(c)

M1 attempts to use a correct  $U_n = a + (n-1)d$  with  $n = 25$  only. Ft their  $d$  provided it is a numerical value. Or any other correct method eg.,  $S_{25} - S_{24}$  etc.A1  $U_{25} = 104$