1.12 (a) (i) d_n **OR** $1, 0.95, 0.90, 0.85, \ldots$ *(A1)*   *(C1)*

(ii) b_n **OR** $1, \dfrac{3}{2}, \dfrac{9}{4}, \dfrac{27}{8}, \ldots$

(A1) (C1)

(b) (i) $\dfrac{1}{2}$ **OR**

0.5 *(A1) (C1)*

> **Note:** Accept 'divide by 2' for *(A1)*.

(ii) $-6\left(\dfrac{1}{2}\right)^{10-1}$ *(M1)(A1)*(ft)

> **Notes:** Award *(M1)* for substitution in the GP n^{th} term formula,
> *(A1)*(ft) for their correct substitution.
> Follow through from their common ratio in part (b)(i).

OR

$\left(-6, -3, -\dfrac{3}{2}, -\dfrac{3}{4},\right) -\dfrac{3}{8}, -\dfrac{3}{16}, -\dfrac{3}{32}, -\dfrac{3}{64}, -\dfrac{3}{128}$ *(M1)(A1)*(ft)

> **Notes:** Award *(M1)* for terms 5 and 6 correct (using their ratio).
> Award *(A1)*(ft) for terms 7, 8 and 9 correct (using their ratio).

$-\dfrac{3}{256} \quad \left(-\dfrac{6}{512}\right)$

(A1)(ft)   *(C3)*

[6 marks]