Write down the next two terms of each sequence.

1 (a) $1,\ 8,\ 27,\ 64,\ \ldots$ (1)

(b) $1,\ 3,\ 6,\ 10,\ \ldots$ (1)

(c) $1,\ \frac{1}{2},\ \frac{1}{4},\ \frac{1}{8},\ \ldots$ (1)

(d) $\frac{1}{2},\ \frac{2}{3},\ \frac{3}{4},\ \frac{4}{5},\ \ldots$ (1)

(4 marks)

2 Find the 7th term of each sequence.

(a) $2,\ 4,\ 6,\ 8,\ \ldots$ (1)

(b) $23,\ 20,\ 17,\ 14,\ \ldots$ (1)

(c) $5,\ 10,\ 20,\ 40,\ \ldots$ (1)

(3 marks)

3 Two of the terms are known. Find the term-to-term rule, then the missing terms.

(a) $\ldots,\ 5,\ \ldots,\ \ldots,\ 11$ (1)

(b) $8,\ \ldots,\ \ldots,\ \ldots,\ 14$ (1)

(c) $\ldots,\ \ldots,\ 3,\ \ldots,\ -11$ (1)

(3 marks)

4 The matchstick patterns below are made of sticks 3 cm long. T_n is the number of sticks in pattern n, and P_n is the perimeter of pattern n in centimetres.



$n = 1$ $n = 2$ $n = 3$ $n = 4$

(a) Complete a table of n, T_n and P_n for $n = 1$ to 4. (2)

(b) Write down the term-to-term rule for T_n, and for P_n. (1)

(c) Find T_5 and P_5. (1)

(4 marks)