Not every sequence here is $n^2 \pm a$. Two are cubes and three go up in equal fractions.

1 Find the nth term of $1,\ 8,\ 27,\ 64,\ \ldots$

(1)

(1 mark)

2 Find the nth term of $2,\ 16,\ 54,\ 128,\ \ldots$

(1)

(1 mark)

3 Find the nth term of $\frac{1}{3},\ \frac{2}{3},\ 1,\ \frac{4}{3},\ \ldots$

(1)

(1 mark)

4 Find the nth term of $\frac{1}{4},\ \frac{1}{2},\ \frac{3}{4},\ 1,\ \ldots$

(1)

(1 mark)

5 Find the nth term of $\frac{1}{2},\ 1,\ \frac{3}{2},\ 2,\ \ldots$

(1)

(1 mark)

6 The nth term of a sequence is $n^2 + 6$.

(a) Write down the first three terms (1)

(b) Find the 12th term (1)

(c) **Is 87 a term of this sequence? Give a reason.** (2)

(4 marks)

7 The nth term of a sequence is $n^2 - 5$.

(a) Which term has the value 220? (2)

(b) **Is 100 a term of this sequence? Give a reason.** (2)

(4 marks)

8 Write down the first four terms of each sequence.

(a) $t_n = n^2 - 8$ (1)

(b) $t_n = \dfrac{n}{5}$ (1)

(c) $t_n = n^3$ (1)

(3 marks)