

Sequences and Proofs – Section Test

Questions 1 and 2 are about the linear sequence 20, 17, 14, 11, 8, ...

The n th term of the sequence is given by $an + b$.

1) What is the value of a ?

2) What is the value of b ?

Questions 3, 4 and 5 are about the quadratic sequence 2, 9, 18, 29, 42, ...

The n th term of the sequence is given by $pn^2 + qn + r$.

3) What is the value of p ?

4) What is the value of q ?

5) What is the value of r ?

Questions 6 and 7 are about the sequence with n th term $n(n+1)$.

6) What is the 5th term of this sequence?

7) The last term of this sequence is 240.
How many terms are in the sequence?

8) A sequence has n th term $n^2 + kn - 3$.
The 9th term is three times the 5th term.
What is the value of k ?

Questions 9 and 10 are about the sequence with n th term $\frac{3-2n}{8n+1}$

9) What is the 3rd term of the sequence?

Give your answer in simplest form as a fraction $\frac{a}{b}$ where a and $b > 0$ are integers.

10) What is the limit of the sequence as $n \rightarrow \infty$?

Give your answer as an exact decimal.

