

Name: _____

YEAR 11 MINI-ASSESSMENT 14

HIGHER – SEQUENCES & ITERATION

1. An n th term for a sequence is given by $4n^2 + 11$.
(a) What are the first three terms in this sequence?

(3)

- (b) 687 is a term in the sequence. Which term?

(2)

[5 marks]

2. Work out the n th term for the sequence 6, 13, 24, 39, 58, ... and work out the 20th term in the sequence.

[4 marks]

3. (a) Show that there is a root to the equation $x^3 - 2x^2 - 5x + 3 = 0$ between $x = 3$ and $x = 4$.

(2)

- (b) Show that $x^3 - 2x^2 - 5x + 3 = 0$ can be written as $x = \sqrt{\frac{5x-3}{x-2}}$

(2)

- (c) Using the iterative formula $x_{n+1} = \sqrt{\frac{5x_n-3}{x_n-2}}$ with $x_0 = 3.5$, find x_1 and x_2 to 4 decimal places.

(2)

[6 marks]