

The r^{th} term of a Quadratic Sequence

Exercises (Tutorial Part 2)

2.1 Find the general term of the quadratic sequence; 2 3 10 23 42

2.2 Find the general term of the quadratic sequence; 3 -5 -30 -69

2.3 Find the general term of the quadratic sequence; 34 12 16 30

2.4 Remember that only three terms need to be known in order to work out the general term of a quadratic sequence. So once three numbers in a quadratic sequence are given, all the other numbers in the sequence are fixed.

(a) Find the two missing numbers in this quadratic sequence:

3 27 43

(b)(i) Find the general term of the quadratic sequence in part (a).

(ii) Prove whether or not the number 180 is in the sequence.

Extension Work

(a) By applying the method of differences to the cube numbers sequence; 1 8 27 64 125 216

determine what the constant number in the third row of differences has to be divided by to give the coefficient of the x^3 term.

(b) Find the general term of the cubic sequence: 3 23 39 81 179 363