**FINDING THE NEXT TERMS**

Write down the next two terms of the sequence: 5; 12; 23; 38; …

**STEP 1: Find the first differences between the terms**



**STEP 2: Find the second differences between the terms**



So there is a common second difference of 44. We can therefore conclude that this is a quadratic sequence.

Continuing the sequence, the next first differences will be:

Add the second difference to

 the first difference.

**Hence**, the next two terms of the sequence will be:

Then extent the sequence

 by adding the NEW first

 differences consecutively

So the sequence will be: 5;12 ; 23; 38; 57; 80; …

**EXERCISE**

In each of the following patterns, write down the next **two** terms:

1. 4; 10; 20; 34; ..
2. 0; 9; 24; 45; ..