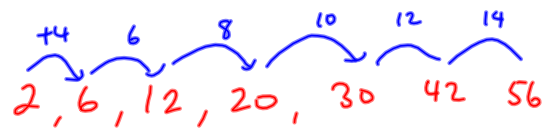


1. Write down the next three terms of each of the following sequences:

- (i) 6, 12, 18, 24, ...  $30, 36, 42$   $d=6$
- (ii) 7, 12, 17, 22, ...  $27, 32, 37$   $d=5$
- (iii) 4.7, 5.9, 7.1, 8.3, ...  $9.5, 10.7, 11.9$   $d=1.2$
- (iv) 2, -1, -4, -7, ...  $-10, -13, -16$   $d=-3$
- (v) 2, 3, 6, 11, 18, 27, ...  $38, 51, 66$  Quadratic  
 $+1, +3, +5, +7, +9, +11, +13, +15$

- (vi) 78, 70, 62, 54, ...
- (vii) 10, 5, 0, -5, -10, ...
- (viii) -64, -55, -46, -37, ...

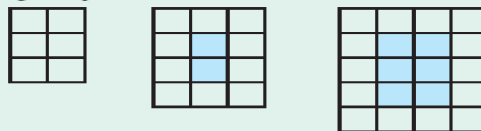
- (ix) 2, 6, 18, ...
- (x) 2, 6, 12, 20, ...



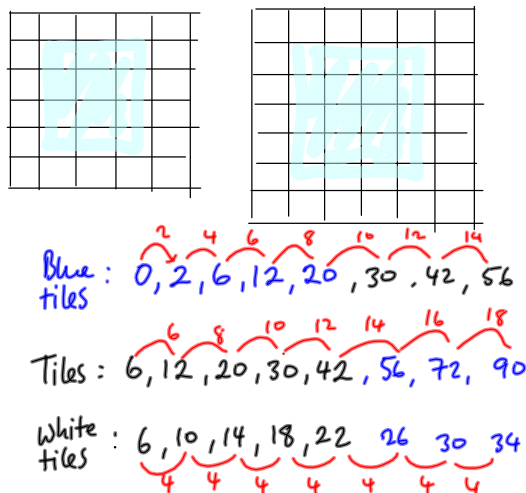
- (xi)  $\frac{3}{4}, \frac{1}{4}, -\frac{1}{4}, -\frac{3}{4}, -\frac{5}{4}, -\frac{7}{4}$
- (xii) 1, 2, 4, 7, 11, ...
- (xiii) 0, 3, 8, 15, 24, ...
- \* (xiv) 3, -6, 12, -24, ...  $48, -96, 192$   $r=-2$  \* Geometric
- (xv)  $\frac{1}{2}, \frac{1}{6}, \frac{1}{12}, \frac{1}{20}, \dots$   $\frac{1}{30}, \frac{1}{42}, \frac{1}{56}$

**Example 2**

The following rectangular patterns are made from two sets of coloured tiles.



- (i) Draw the next two patterns of tiles.
- (ii) Write a number sequence for the blue tiles used in each of these patterns.
- (iii) Write a number sequence for the total number of tiles used in each of these patterns.
- (iv) Write a number sequence for the white tiles used in each of these patterns.
- (v) Write out the next 3 terms in each sequence found in (ii), (iii), (iv).



2. Find the first four terms of the following sequences, given the  $n$ th term ( $T_n$ ) in each case.

(ix)  $T_n = n \cdot 2^n$

$$T_1 = (1) 2^1 = 2$$

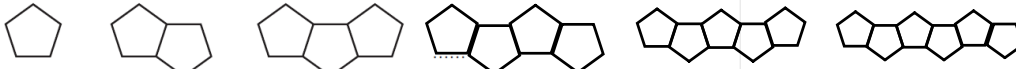
$$T_2 = (2) 2^2 = 8$$


$$T_3 = (3) 2^3 = 24$$

$$T_4 = (4) 2^4 = 64$$

7. By inspection, draw the next three patterns of each of the following sequences.

Write a number sequence for each set of patterns.

(i) 

(ii) 

(iii) 