

Number Sequences I

T E S T

Question 1

Start with a 7 and keep adding 2.5

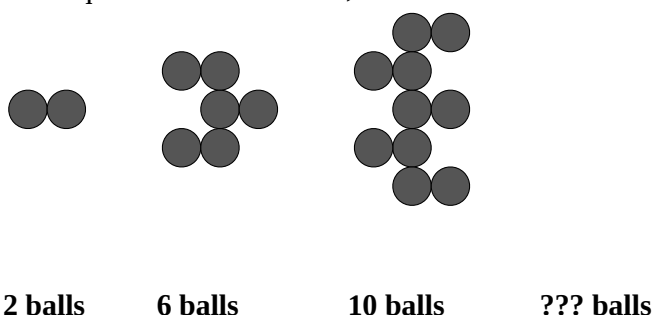
- (a) Write down the first ten terms in the sequence.

_____, _____, _____, _____, _____,
 _____, _____, _____, _____, _____, ...

- (b) Will the number 37 be in this sequence ?

Question 2

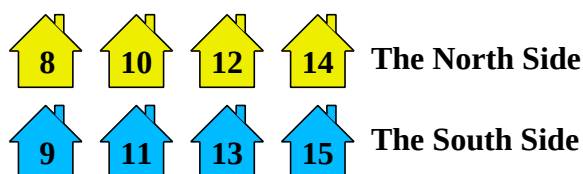
Study the picture sequence shown below;



- (a) Draw the fourth diagram.
 (b) How many balls were needed to make the fourth diagram ?

Question 3

The diagram shows how the houses are numbered along a part of *Main Street*.



- (a) Will house 2 be on North or South Side ?
 (b) Will house 96 be on North or South Side ?

Question 4

Start with a 68 and keep subtracting 9

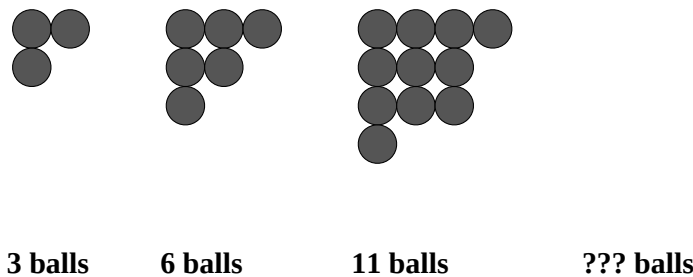
(a) Write down the first ten terms in the sequence.

_____ , _____ , _____ , _____ , _____ ,
_____ , _____ , _____ , _____ , _____ , ...

(b) Will the number -1037.4 be in this sequence ?

Question 5

Study the picture sequence shown below;



(a) Draw the fourth diagram.

(b) How many balls were needed to make the fourth diagram ?

Question 6

A sequence is described by the following algebra;

$$A_n = 5n - 3$$

Write down the first six terms;

Position, n	1 st	2 nd	3 rd	4 th	5 th	6 th
Term, $A_n = 5n - 3$						

Question 7

A sequence is described by the following algebra;

$$B_n = 0.5n + 6$$

Write down the first six terms;

Position, n	1 st	2 nd	3 rd	4 th	5 th	6 th
Term, $B_n = 0.5n + 6$						

Question 8

A sequence is described by the following algebra;

$$C_n = 12 - n$$

Write down the first six terms;

Position, n	1 st	2 nd	3 rd	4 th	5 th	6 th
Term, $C_n = 12 - n$						

Question 9

A sequence is described by the following algebra;

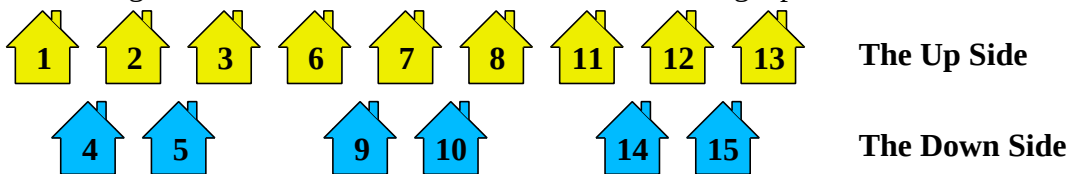
$$D_n = \frac{60}{n}$$

Write down the first six terms;

Position, n	1 st	2 nd	3 rd	4 th	5 th	6 th
Term, $D_n = \frac{60}{n}$						

Question 10

The diagram shows how the houses are numbered along a part of *Old Kent Road*.



- (a) Will house 32 be on Up or Down Side ?
- (b) Will house 79 be on Up or Down Side ?
- (c) If the house number divides by five exactly, which side is it on ?
- (d) If the house number has a remainder of 3 when divided by 5, which side ?
- (e) A sequence is described by the following algebra;

$$E_n = 5n - 4$$

Write down the first six terms;

Position, n	1 st	2 nd	3 rd	4 th	5 th	6 th
Term, $E_n = 5n - 4$						

- (f) Are the houses that have numbers in sequence E on Up or Down Side ?

Question 11

Find the first four terms of the sequence;

$$F_n = (2n + 3)(3n - 1)$$

Working:

$$\text{When : } n = 1 : F_1 = \quad \times \quad =$$

$$n = 2 : F_2 = \quad \times \quad =$$

$$n = 3 : F_3 = \quad \times \quad =$$

$$n = 4 : F_4 = \quad \times \quad =$$

Write your answers in this table....

Position, n	1 st	2 nd	3 rd	4 th
Term, $F_n = (2n + 3)(3n - 1)$				

Question 12

Find the first four terms of the sequence;

$$G_n = (9 - 2n)(3n + 1)$$

Working:

$$\text{When : } n = 1 : G_1 = \quad \times \quad =$$

$$n = 2 : G_2 = \quad \times \quad =$$

$$n = 3 : G_3 = \quad \times \quad =$$

$$n = 4 : G_4 = \quad \times \quad =$$

Write your answers in this table....

Position, n	1 st	2 nd	3 rd	4 th
Term, $G_n = (9 - 2n)(3n + 1)$				

Question 13

A virus spreads by infecting cells.

Each infected cell infects four uninfected cells each hour.

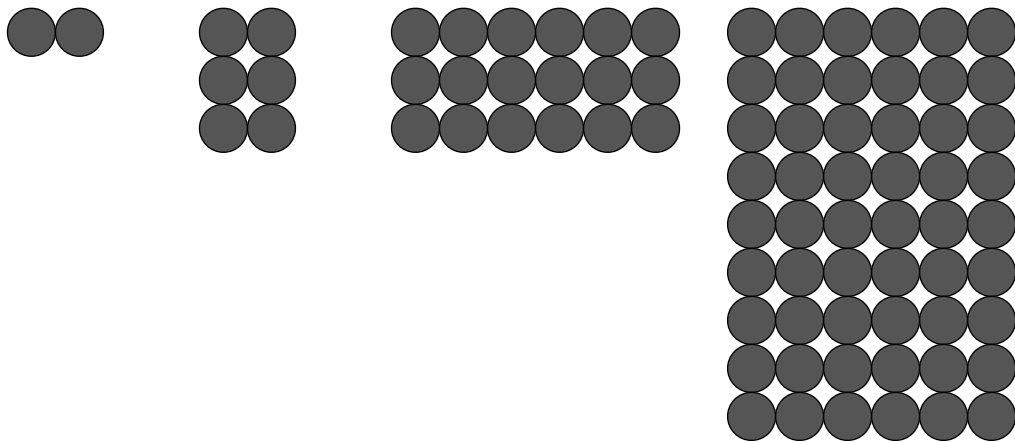
To begin with, at the start of the first hour two cells are infected.

How many cells are infected, in total, by the start of the sixth hour ?

Question 14

On a computer two small circles are drawn.

Using *copy*, *paste* and *paste* again, the number of dots grows as shown;



The sequence is described by the formula;

$$P_n = \frac{2}{3} \times 3^n$$

Write out the first six terms of this sequence in the following table;

Position, n	1 st	2 nd	3 rd	4 th	5 th	6 th
Term, $P_n = \frac{2}{3} \times 3^n$						