

EXERCISE - 5 (F)

1. For each pattern, given below, write the next three steps :

(i) $1 \times 9 + 1 = 10$

$12 \times 9 + 2 = 110$

$123 \times 9 + 3 = 1110$

$1234 \times 9 + 4 = 11110$

$12345 \times 9 + 5 = 111110$

$123456 \times 9 + 6 = 1111110$

(ii) $9 \times 9 + 7 = 88$

$98 \times 9 + 6 = 888$

$987 \times 9 + 5 = 8888$

$9876 \times 9 + 4 = 88888$

$98765 \times 9 + 3 = 888888$

$987654 \times 9 + 2 = 8888888$

(iii) $1 \times 8 + 1 = 9$

$12 \times 8 + 2 = 98$

$123 \times 8 + 3 = 987$

$1234 \times 8 + 4 = 9876$

$12345 \times 8 + 5 = 98765$

$123456 \times 8 + 6 = 987654$

(iv) $111 \div 3 = 37$

$222 \div 6 = 37$

$333 \div 9 = 37$

$444 \div 12 = 37$

$555 \div 15 = 37$

$666 \div 18 = 37$

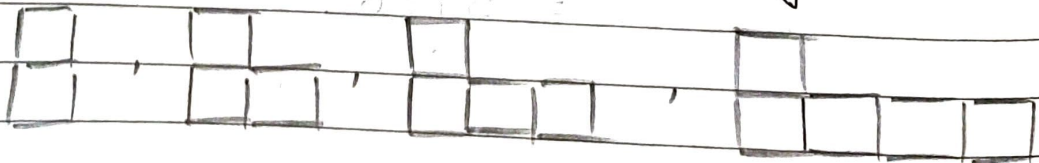
2. Complete each of the following magic squares :

6	7	2
1	5	9
8	3	4

4	9	8
11	7	3
6	5	10

16	2	12
6	10	14
8	18	4

3. See the following pattern carefully :



(i) If n denotes the number of figures and S denotes the number of matchsticks, find S in terms of n .

$$S = 3n + 4$$

(ii) Find how many matchsticks are required to make the :

(1) 15th figure = 49

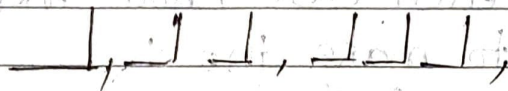
(2) 40th figure = 124

(iii) Write a description of the pattern in words.

Number of matchsticks (S) is equal to four more than three times the number of the figure.

4. In the following pattern, draw the next two

i) figures:



ii) Construct a table to describe the figures in the above pattern.

iii) If n denotes the number of figures and L denotes the number of matchsticks, find L in terms of n .

iv) Find how many matchsticks are required to make the :

(1) 12th figure

(2) 20th figure.

Sol. i) and

ii)	n	1	2	3	4	5
	L	2	4	6	8	10

iii) $L = 2n$

iv) (1) 24

(2) 40

5. In each case of the following patterns, Construct the next figure.

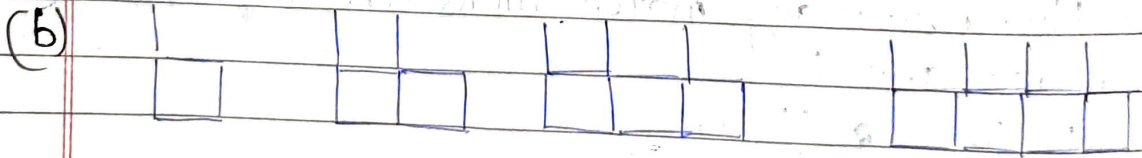
(i) In each case, if n denotes the number of figures and F denotes the number of match sticks used, find F in terms of n .

(ii) Also find, in each case, how many matchsticks are required to make the 16th figure and 30th figure.



i) $F = 3n + 2$

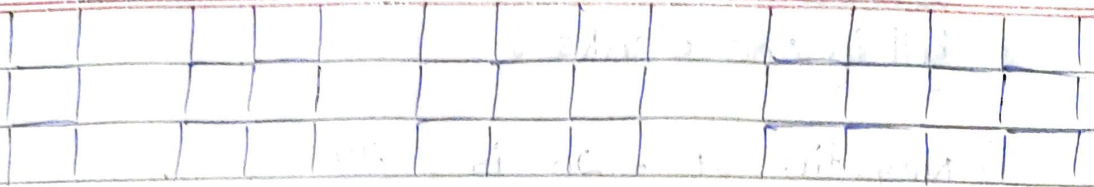
ii) 50 and 92



i) $F = 4n + 1$

ii) 65 and 121

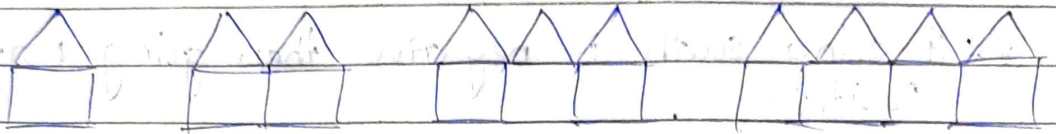
c)



i) $F = 5n + 3$

ii) 83 and 153

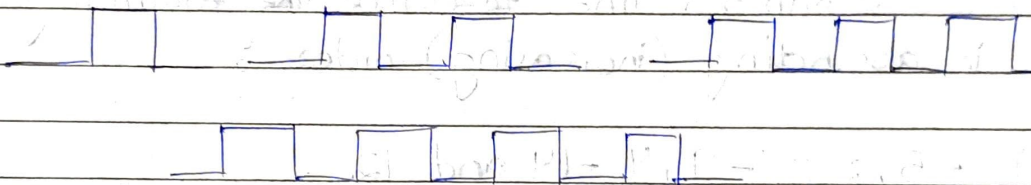
d)



i) $F = 5n + 1$

ii) 81 and 151

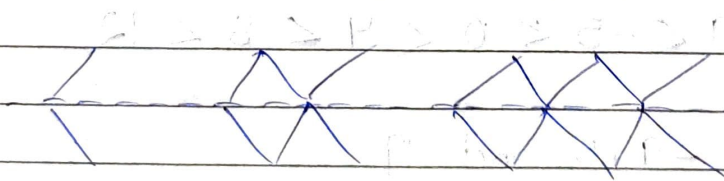
e)



i) $F = 4n + 1$

ii) 65 and 121

f)



i) $F = 4n - 2$

ii) 62 and 118