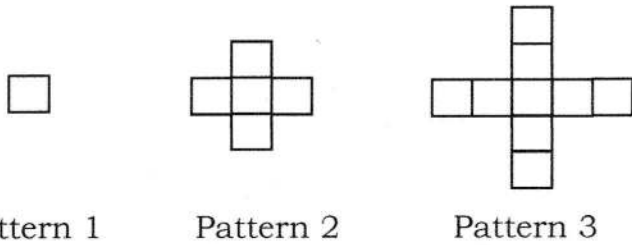
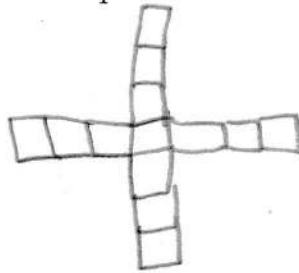


**PATTERNS AND SEQUENCES – PRACTICE QUESTIONS**

1.  
The pattern below is made from squares.



(a) Draw Pattern 4 in the space below.



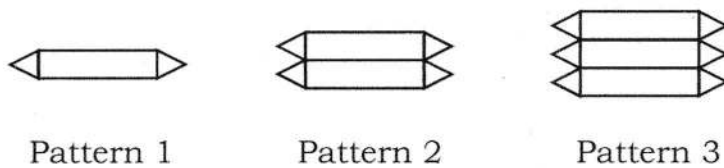
(b) How many squares are there in Pattern 6?

21

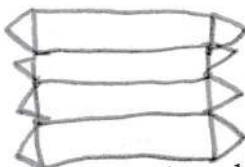
(c) Jack says “There is a pattern in the sequence which has 90 squares”.  
Explain why Jack is wrong.

90 is not odd

2.  
The pattern below is made from triangles and rectangles.



(a) Draw Pattern 4 in the space below.



(b) How many rectangles are there in Pattern 7?

7

(c) How many triangles are there in Pattern 9?

18

3.  
The pattern below is made from sticks.



Pattern 1



Pattern 2



Pattern 3

(a) Draw Pattern 4 in the space below.



(b) Complete the table below.

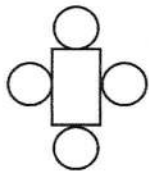
Pattern	1	2	3	4	5
Number of sticks	4	7	10	13	16

(c) Erica says "There is a pattern in the sequence which has 20 sticks".

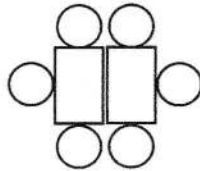
Is Erica correct? Give a reason for your answer.

wrong because the pattern goes to 13, 16, 19, 22

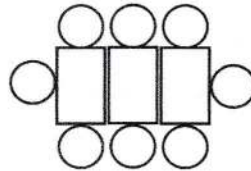
4.  
The pattern below is made from rectangles and circles.



Pattern 1

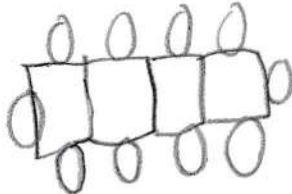


Pattern 2



Pattern 3

(a) Draw Pattern 4 in the space below.



(b) How many circles are there in Pattern 7?

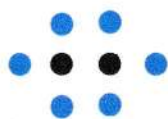
16

(c) Patrick says "There are 10 more circles than rectangles in Pattern 8".

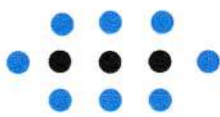
Is Patrick right? Give a reason for your answer.

circles - 18  
rectangles - 8      yes

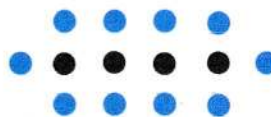
5.  
The pattern below is made from black and blue dots.



Pattern 1



Pattern 2



Pattern 3

(a) Complete the table below.

Pattern	1	2	3	4	5
Total number of dots	8	11	14	17	20

(b) How many black dots are there in Pattern 8?

9

(c) There is a pattern in the sequence which contains 14 blue dots.  
How many black dots are there in this pattern?

6

(d) There is a pattern in the sequence which contains 23 dots in total.  
How many blue dots are there in this pattern?

16

6.  
The pattern below is made from red and yellow triangles.



Pattern 1



Pattern 2



Pattern 3

(a) How many triangles are there in Pattern 5?

19

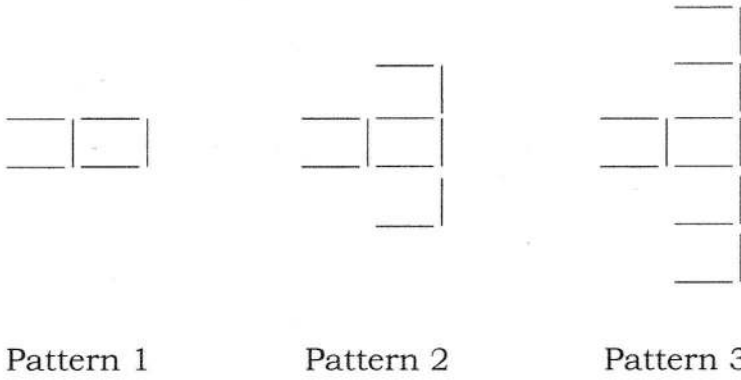
(b) There is a pattern in the sequence which contains 12 red triangles.  
How many yellow triangles are there in this pattern?

11

(c) Which pattern contains 19 yellow triangles?

Pattern 10

7.  
The pattern below is made from sticks.



(a) Complete the table below.

Pattern	1	2	3	4	5
<b>Number of sticks</b>	6	10	14	18	22

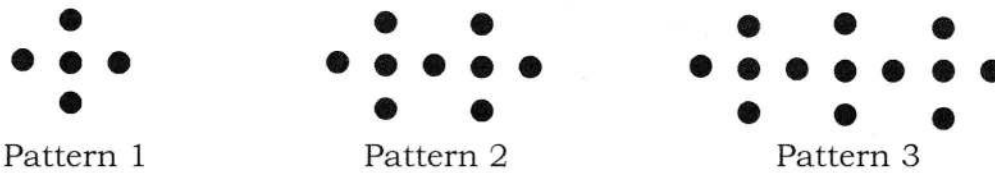
(b) Which pattern contains 34 sticks?

8

(c) Write down a rule for finding the number of sticks in pattern n.

$$4n + 2$$

8.  
The pattern below is made from dots.



(a) How many dots are there in Pattern 6?

25

(b) Which pattern contains 33 dots?

Pattern 8

(c) Write down a rule for finding the number of dots in pattern n.

5, 9, 13       $4n + 1$