SEQUENCES

Aims:
To reinforce work on basic sequences (numerical and geometrical) and in particular to give practice with n^{th} terms.

There are three activities here in which it is intended that students will work in pairs. Each activity is to be scored and the winning pair will then receive a prize!

I have used these as a means of concluding work on basic sequences.

Each activity is timed and should be completed without the assistance of the teacher. Time is given to discuss the answers to each activity and it is here that the real objectives of the work are satisfied.

Suggested timings:

- Activity one. 5–10 minutes to complete.
  5 minutes discussion.
- Activity two. 5–10 minutes to complete.
  5 minutes discussion.
- Activity three. 30 minutes inclusive of discussion time.

Activity 1. Matching n^{th} terms.

Match the following ***n*th terms** with the sequences on the right.

$3n + 1$	3, 5, 7, 9, 11, ……
$2n - 1$	0, 2, 4, 6, 8, ……
$5n - 2$	3, 8, 13, 18, 23, ……
$10n + 3$	1, 3, 5, 7, 9, ……
$2n + 1$	30, 25, 20, 15, 10, ……
$2n - 2$	5, 10, 15, 20, 25, ……
$n + 5$	0, 1, 2, 3, 4, 5, ……
$n - 1$	4, 7, 10, 13, 16, ……
$5n$	6, 7, 8, 9, 10, ……
$35 - 5n$	13, 23, 33, 43, 53, ……

{10 marks}

Activity 2. Find the next 2 terms.

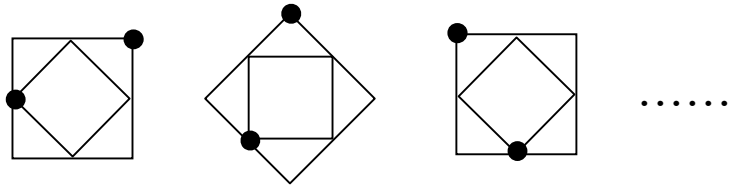
Find the next 2 terms in each of the following sequences.

i) 3, 10, 17, 24, 31, ……

ii) 100, 80, 60, 40, 20, ……

iii) 1, 2, 4, 7, 11, ……

iv) 32, 16, 8, 4, 2, ……

v)  ……

vi) a, ba, cba, dcba, ……

vii) 010, 121, 232, 343, 454, ……

viii) 1, 4, 9, 16, 25, ……

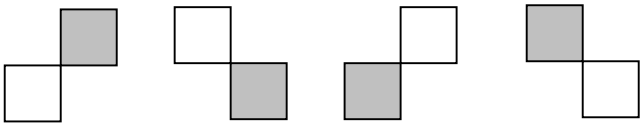
ix) 2, 3, 5, 8, 13, ……

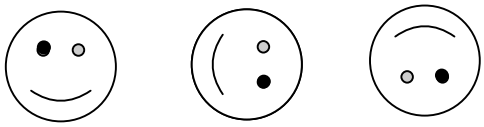
x) 10, 2, 11, 4, 12, 6, ……

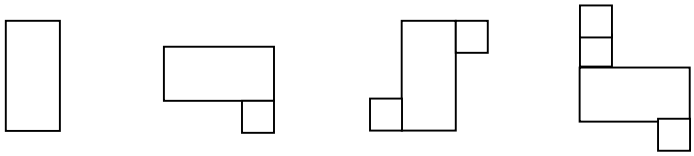
{10 marks}

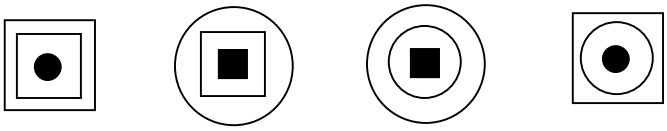
Activity 3.

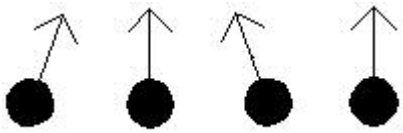
For each of the following, draw the next shape in the **sequence**.

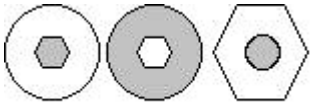
a) 

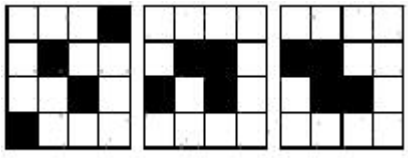
b) 

c) 

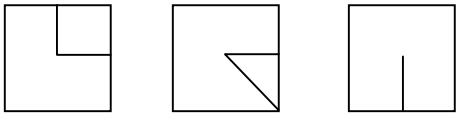
d) 

e) 

f) 

g) 

h) 

i) 

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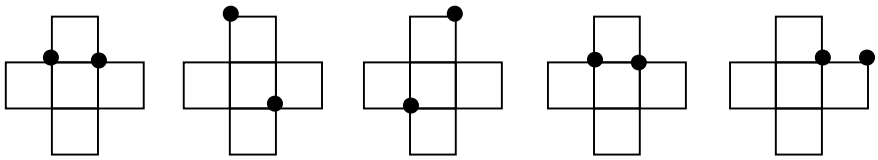
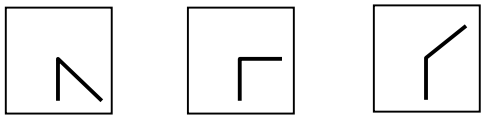


k)



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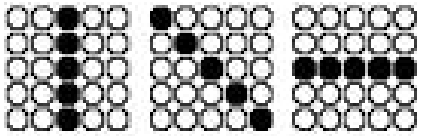

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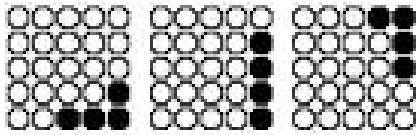

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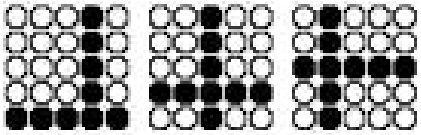
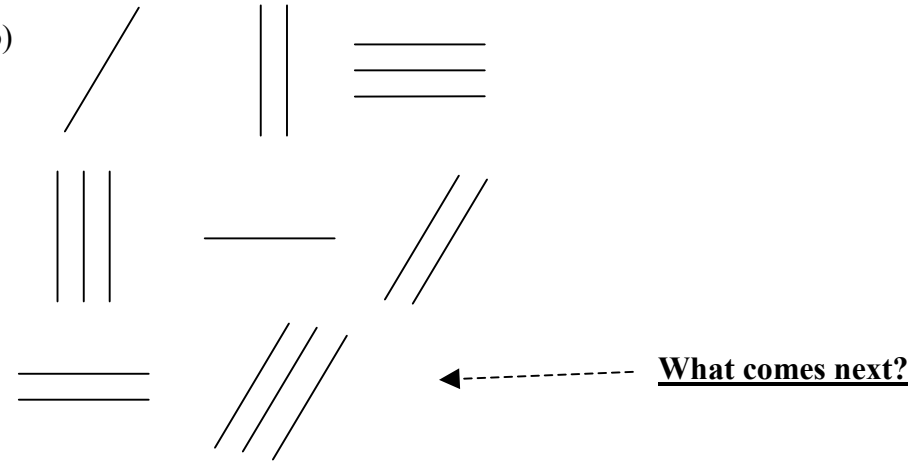


o)



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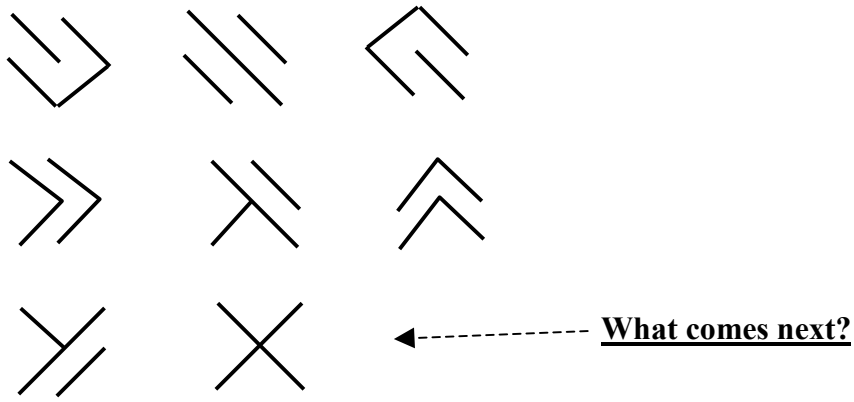
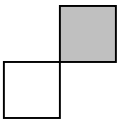


ANSWERS TO ACTIVITY 3.

a) 

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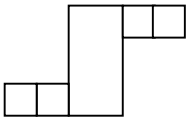
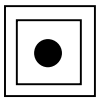
c) 

d) 

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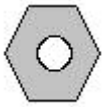
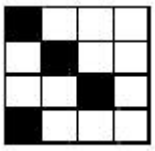
f) 

g) 

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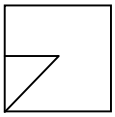
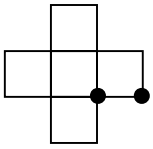
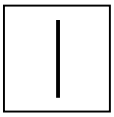
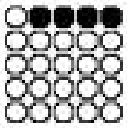
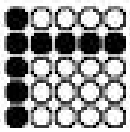
i) 

j) 

k) 

l) 

m) 

n) 

o)

p)