Name: .....

Class: 5B...

WEEK 6

WORKSHEET: MATHS
Week 6 – Patterns and sequences

Exercise 1: Find the term-to-term rule and the next three terms.

Pattern	Term-to-term rule
1, 4, 7, 10, ...	_____
-10, -14, -18, -22, ...	_____
1, 10, 100, 1000, ...	_____
2, 4, 8, 16, ...	_____
1, 3, 9, 27, ...	_____
64, 32, 16, 8, ...	_____
8, 22, 36, 50, ...	_____

Exercise 2: Find the missing terms.

(a) 4, □, 8, 10, . . . (b) 2, 5, □, 11, . . . (c) 5, 9, □, 17, . . .

(d) 25, □, 37, 43, . . . (e) 15, 24, □, 42, . . . (f) 34, □, 24, 19, . . .

(g) 18, □, 40, 51, . . . (h) 1, □, □, 19, . . . (i) 3, □, □, 27, . . .

(j) 18, □, □, 39, . . . (k) 6, □, □, □, 42, . . .

Exercise 3: Use the position-to-term rule to find the missing number.

(a)

Position	1	2		8		15
Term	7	14	35		98	

(b)

Position	10	2		4	20	12
Term		18	108	36		

(c)

Position	1	2	3	4	9	
Term	7	12	17			77

Exercise 4: Here are the first four terms of a number sequence 9, 15, 21, 27, ...

(a) Write down the next term of the number sequence.

(b) Explain how you found your answer to (a).

(c) James says that the 20th term of the sequence is 122. Explain why James must be wrong.

(d) Find the 20th term of the sequence.

Exercise 5: Here are the first four terms of a number sequence 5, 8, 11, 14, ...

(a) Write down the next term of the number sequence.

(b) Find the 10th term of the sequence.

(c) Find the term-to-term rule of the sequence.

(d) Work out the 101st term.

(e) Work out the 59th term of the number sequence.

Exercise 6: Here are the first four terms of a number sequence 9, 13, 17, 21, ...

Work out the difference between the 10th term and 15th term in the sequence.

Exercise 7: Here are the first five terms of a number sequence 18, 30, 42, 54, 66, ...

(a) Write down the next term of the number sequence.

(b) 883 is not a term in this number sequence. Explain why.

Exercise 8*: Find the next term in these sequences.

(a) O, T, T, F, F, ...

(b) M, T, W, T, F, ...

(c) R, O, Y, G, B, ...

(d) 1, 11, 21, 1211, ...

Challenge yourself

Question 1: According to the pattern below, find the next term in the sequence.

1, 2, 4, 7, 11, 16, 22, ...

Answer: _____

Question 2: What is the 8th number in the sequence with pattern below?

2 , 5 , 10 , 17 , 26 , 37 , ...

Answer: _____

Question 3: Find the missing number on the table below.

2	5	1	11
3	6	2	20
4	7	3	31
5	8	4	?

Answer: _____

Question 4: Refer to the pattern below, find the 30th figure in the sequence.

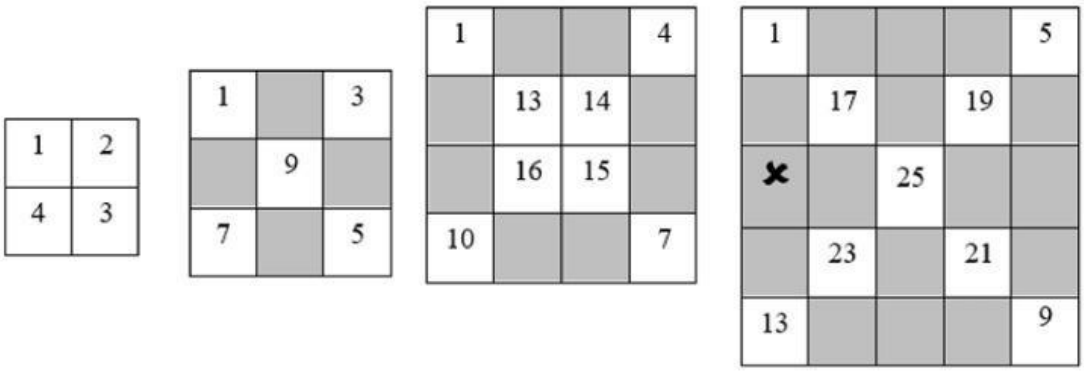
Answer: _____

Question 5: According to the pattern shown below, how many triangle(s) is / are there from the 1st to the 300th symbol counting from the left?

○ ○ △ ○ □ △ □ ○ ○ △ ○ □ △ □ ...

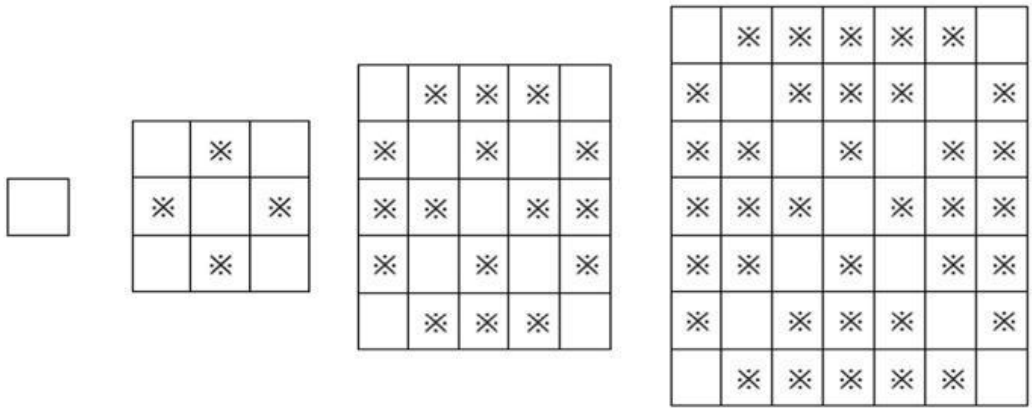
Answer: _____

Question 6: Four tables below have number filled according to the same pattern but some cells are being covered. Which number is being covered at the position of symbol "x"?



Answer: _____

Question 7: According to the pattern below, how many ※ is / are there in the 9th group?



1st Group 2nd Group 3rd Group 4th Group

Answer: _____

Question 8: What is the value of the number to represent "?" in the following sequence?

2, 3, 5, 9, 17, 33, ? , 129, ...

Answer: _____

Question 9: According to the pattern shown below, how many triangle(s) is / are there from the 1st to the 500th figure counting from the left?

○ △ □ △ ○ △ □ △ ○...

Answer: _____

Question 10: According to the pattern shown below, how many circle(s) is / are there from the 1st to the 200th figure counting from the left?

○ △ □ ○ ○ △ △ □ □ ○ ○ ○ △ △ △ □ □ □...

Answer: _____