



**MATHEMATICS PROGRAMME FOR GRADE 11 LEARNERS FROM 11 MAY – 29 MAY 2020**

**TOPIC: Number Patterns**

**MARKS IN EXAMINATION PAPER: 25 +/- 3 Marks in Paper 1**

**MAIN RESOURCE(S) SUGGESTED: Everything Maths (Siyavula) Grade 11**

**ADDITIONAL RESOURCES: Final Examination Question Papers**

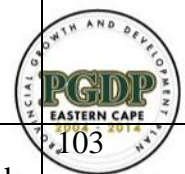
**MEDIA: DSTV Channel 319**

**USE OF EVERYTHING MATHS (SIYAVULA) GRADE 11  
11 MAY – 22 MAY 2020. THEN USE THE ATTACHED 2018 AND 2016 QUESTION PAPERS.**

**USE EVERYTHING MATHS (SIYAVULA) GRADE 11 (PAGE 98 TO 114) AS FOLLOWS:**

- It can be an advantage if one can first sign up to SIYAVULA ([www.siyavula.com](http://www.siyavula.com)).
- To get answers for exercises use codes in the textbook below exercises and log in to SIYAVULA ([www.siyavula.com](http://www.siyavula.com))
- Read and follow the explanation about each sub-topic/ concept.
- Follow and practice Examples indicated 'WORKED EXAMPLES'.
- Then do Activities without looking at the solutions first.
- Then check your solutions against solutions provided.
- Then do corrections.
- Double or triple check if you are able to do Activities on your own without looking at the solutions until you master the concept(s).

	DATE	CHAPTER 3 SUB-TOPIC	EXAMPLES	ACTIVITY	PAGE(S)
<b>WEEK 1</b>	11/05	Revision: Terminology and describing patterns.	Read and try to understand terminology and explanation in page 98-100. Worked example 3 – 1	Activity 3 -1 Qn No. 1	98-101
	12/05	Linear Patterns	Worked example 3 - 1	Activity 3 – 1 Qn No. 2 & 3	101
	13/05	Linear Patterns	Revise Activity 3 – 1 Qn No. 2 & 3	Activity 3 – 1 Qn No. 4 & 5	101
	14/05	Quadratic Patterns	Read and try to understand terminology and explanation of quadratic patterns in page 103	Activity 3 – 2 Qn No. a; b; c; and d	103
	15/05	Quadratic Patterns	Revise Activity 3 – 2 Qn No. c and d in page 103	Activity 3 – 2 Qn No. h; i; j and k	103



<b>WEEK 2</b>	18/05	Quadratic Patterns	Worked example 2 in page 104	Activity 3 – 2 Qn No. 2 (a); (d); (f)	104
	19/05	Activity 3-2 continues	Continue with the activity.	Activity 3 – 2 Qn No. 3 (a); (b) & (c)	104
	20/05	Quadratic Patterns	Worked example 3 & 4 in page 106 & 108 respectively.	Activity 3 – 3 Qn No. 1 (a); (c); (e) & 2	110
	21/05	Activity 3-3 continues	Continue with the activity.	Activity 3 – 3 Qn No. 1 (b); 3; 4 & 5	110
	22/05	Revise Number Patterns using any Previous question paper			
<b>WEEK 3</b>	25/05	Intensive revision of Number Patterns using previous years' question papers. 2016 and 2018 questions are attached on page 3 – 4 of this document so you may start by following the programme on the next column.	2018 Question 3		Attached on Page 3 – 4 of this document
	26/05		2016 Question 3		
	27/05		2018 Question 4		
	28/05		2016 Question 4		
	29/05	Write a Topic Test: Number Patterns			

building blocks for growth.



*Ikamva eliqaqambileyo!*

## NOVEMBER 2018 Paper 1

### QUESTION 3

- 3.1 Given the linear pattern:  $7; 2; -3; \dots$
- 3.1.1 Determine the general term,  $T_n$ , of the linear pattern. (2)
- 3.1.2 Calculate the value of  $T_{20}$ . (2)
- 3.1.3 Which term in the pattern has a value of  $-138$ ? (2)
- 3.2  $6; 2x+1$  and  $3x-3$  are the first three terms of a linear pattern.  
Calculate the value of  $x$ . (3)
- [9]

### QUESTION 4

The quadratic number pattern:  $4; p; 11; q; 22; \dots$  has a constant second difference of 1.

- 4.1 Show that  $p = 7$  and  $q = 16$ . (3)
- 4.2 Determine the general term,  $T_n$ , of the quadratic pattern. (4)
- 4.3 Determine the value of  $n$  if  $T_n = 232$ . (4)
- 4.4 If the sum of two consecutive terms in the pattern is 1 227, calculate the difference between these two terms. (5)
- [16]

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## NOVEMBER 2016 Paper 1

### QUESTION 3

Consider the quadratic pattern:  $-9; -6; 1; 12; x; \dots$

- 3.1 Determine the value of  $x$ . (1)
- 3.2 Determine a formula for the  $n^{\text{th}}$  term of the pattern. (4)
- 3.3 A new pattern,  $P_n$ , is formed by adding 3 to each term in the given quadratic pattern. Write down the general term of  $P_n$  in the form  $P_n = an^2 + bn + c$ . (1)
- 3.4 Which term of the sequence found in QUESTION 3.3 has a value of 400? (4)
- [10]**

### QUESTION 4

- 4.1 Given the linear pattern:  $18; 14; 10; \dots$
- 4.1.1 Write down the fourth term. (1)
- 4.1.2 Determine a formula for the general term of the pattern. (2)
- 4.1.3 Which term of the pattern will have a value of  $-70$ ? (2)
- 4.1.4 If this linear pattern forms the first differences of a quadratic pattern,  $Q_n$ , determine the first difference between  $Q_{509}$  and  $Q_{510}$ . (2)
- 4.2 A quadratic pattern has a constant second difference of 2 and  $T_5 = T_{17} = 29$ .
- 4.2.1 Does this pattern have a minimum or maximum value? Justify the answer. (3)
- 4.2.2 Determine an expression for the  $n^{\text{th}}$  term in the form  $T_n = an^2 + bn + c$ . (5)
- [15]**

**REMEMBER, PRACTICE MAKES PERFECT!**

**SO, PRACTICE, PRACTICE AND PRACTICE!**