Mathematics · Grade 7

Term 1–4 | 13 questions | CAPS-aligned

TOTAL 71 MARKS

NAME AND SURNAME _____ CLASS _____ DATE _____

Instructions

1. Read all the questions carefully before you begin writing.
2. Answer all the questions on the question paper itself.
3. Show all your working where the question asks for it.
4. Write neatly. Work that cannot be read cannot be marked.
5. You may use a pencil and a ruler for drawings.
6. Calculators are not allowed.

Question	Content of the question	Marks	Obtained
1	True or false	5	
2	Short questions	15	
3	Exponents and square roots	3	
4	Multiples and factors	5	
5	Ratio and rate	4	
6	Financial mathematics	3	
7	Fractions	3	
8	Functions and relationships	2	
9	Percentages	5	
10	Functions, patterns and equations	5	
11	Numeric and geometric patterns	5	
12	Negative numbers	9	
13	Integers in patterns, flow diagrams and graphs	7	
	Total	71	
	Percentage		%

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1 True or false

5 marks

1.1 State whether each statement is TRUE or FALSE. **(5)**

Statement	True / False
1. $-7 + 12 = 5$	
2. $-9 - (-4) = -13$	
3. $2^4 = 8$	
4. The HCF of 12 and 18 is 6	
5. $0{,}25 = \frac{1}{4}$	

2 Short questions

15 marks

2.1 Calculate: $-15 + 8$ **(1)**

2.2 Calculate: $-6 - (-11)$ **(1)**

2.3 Calculate: $-14 + 6$ **(1)**

2.4 Calculate: $8 - (-5)$ **(1)**

2.5 Write $3 \times 3 \times 3 \times 3$ in exponent form. **(1)**

2.6 Calculate: $5^2 + 3^3$ **(1)**

2.7 Write 0,6 as a common fraction in simplest form. **(1)**

2.8 Write $\frac{3}{8}$ as a decimal fraction. **(1)**

2.9 Calculate 20% of R450. **(1)**

2.10 Solve by inspection: $x + 4 = -7$ (x is an integer) **(1)**

2.11 Solve by inspection or by trial and improvement. Check your answer: $x + 9 = 17$ **(1)**

2.12 Write the ratio 18 : 24 in simplest form. **(1)**

2.13 Round 12,358 off to TWO decimal places. **(1)**

2.14 Write 607 080 050 in expanded notation. **(1)**

2.15 What is the value of $\sqrt{49}$? **(1)**

3 Exponents and square roots

3 marks

3.1 Calculate: 2^5 **(2)**

3.2 Calculate: $\sqrt{81} + \sqrt{16}$ **(1)**

4 Multiples and factors

5 marks

4.1 Write down all the factors of 36. **(2)**

4.2 Write down the first four multiples of 7. **(1)**

4.3 Write 84 as a product of its prime factors. **(2)**

5 Ratio and rate

4 marks

5.1 Divide R960 in the ratio 3 : 5. **(2)**

5.2 A train travels 315 km in $3\frac{1}{2}$ hours. What is its average speed in kilometres per hour? Show your working. **(2)**

6 Financial mathematics

3 marks

6.1 Mr Dlamini earns R12 500 a month. He budgets 30% of it for rent and R2 850 for food, and saves the rest. How much does he save? Show your working. **(3)**

7 Fractions

3 marks

7.1 Calculate: $\frac{2}{3} + \frac{1}{5}$ **(2)**

7.2 Calculate: $\frac{3}{4} \times \frac{4}{5}$ **(1)**

8 Functions and relationships

2 marks

8.1 The rule is $T = 2p - 3$. Complete the table. **(2)**

p	2	4	7
T	1		

9 Percentages

5 marks

9.1 A pair of takkies costs R1 250. The shop gives 15% discount. How much do you pay? **(3)**

9.2 A test is out of 40 marks. Thabo scores 34. What is his percentage? **(2)**

10 Functions, patterns and equations

5 marks

10.1 The rule "multiply x by 3 and then subtract 4" can also be written as a formula. **(2)**

a. Write the formula: $y =$ _____

x	1	2	3
y	–1	2	5

b. Does the table above follow the same rule? Check it for $x = 1$. _____

10.2 Look at the pattern: 1 ; 4 ; 9 ; 16 ; 25 ; … **(2)**

a. Write the next term: _____

b. Write the 12th term and explain how the term is related to its position: _____

10.3 Solve by inspection or by trial and improvement. Check your answer: $4x - 7 = 21$ **(1)**

11 Numeric and geometric patterns

5 marks

11.1 Extend the number pattern: 5 ; 11 ; 23 ; _____ ; _____ **(2)**

11.2 Write down the rule of this pattern. **(1)**

_____

11.3 Draw the 4th figure of the geometric pattern below. **(2)**



12 Negative numbers

9 marks

12.1 Arrange the numbers from the SMALLEST to the LARGEST. **(3)**

−7 · 3 · −2 · 0 · −11 · 5

_____

12.2 Calculate. **(3)**

a. −5 + 8 = _____ b. 3 − 9 = _____ c. −4 − 6 = _____

12.3 The temperature was −3 °C at 06:00 and 11 °C at 13:00. By how many degrees did it rise? **(3)**

_____

_____

_____

13 Integers in patterns, flow diagrams and graphs

7 marks

13.1 Look at the pattern: 11 ; 7 ; 3 ; −1 ; _____ ; _____ **(3)**

a. Write the next TWO terms: _____

b. Describe the rule in words: _____

13.2 The rule of a flow diagram is: output = input − 9 **(2)**

a. What is the output if the input is −4? _____

b. What is the input if the output is −2? _____

13.3 Draw a global graph (no numbers) of the water level in a bath. The bath fills at a steady rate. Then the tap is closed and the level stays the same for a while. Then the plug is pulled and the bath empties quickly. Label the axes “time” and “water level”. **(2)**

Total **71 marks**



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