LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

SEKHUKHUNE SOUTH DISTRICT

GRADE 8

MARKS: 75

DURATION: 1,5 hours

This paper consists of 7 pages including the cover page.

INSTRUCTIONS AND INFORMATION

1. This question paper consists of **FIVE** questions. Answer **ALL** the questions.
2. Number the answers correctly according to the numbering system used in this question paper.
3. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
4. Show **ALL** calculations clearly.
5. Round off **ALL** final answers appropriately according to the given context, unless stated otherwise.
6. Indicate units of measurement, where applicable.
7. Write neatly and legibly.

QUESTION 1

1.1. (MULTIPLE CHOICE) Choose the correct letter with the correct answer.

1.1.1. The HCF of 18; 30 and 48 is: (1)

A) 3

B) 4

C) 6

D) 8

1.1.2. If the temperature is $-7°C$ and then it rises by $15°C$, what will the temperature be? (1)

A) $-22°C$

B) $22°C$

C) $8°C$

D) $-8°C$

1.1.3. Write 0,00045 in scientific notation (1)

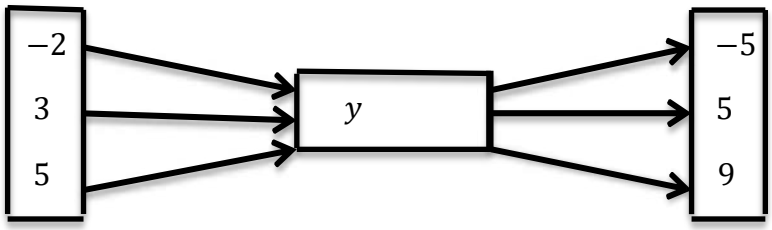
A) 45×10^{-4}

B) $4{,}5 \times 10^{4}$

C) $4{,}5 \times 10^{-5}$

D) $4{,}5 \times 10^{-4}$

1.1.4. Write the equation defining the relationship between the input x and output y (1)



A) y = 2x + 1

B) y = 2x - 1

C) y = 3x – 2

D) y = x - 2

	4.1.3	The following verbal expression is given:	(1)
		Subtract a number from the product of 3 and that same number.	
		The correct algebraic expression is …	
		A) $y - 3y$	
		B) $3 - y$	
		C) $y - 3$	
		D) $3y - y$	
			[5]

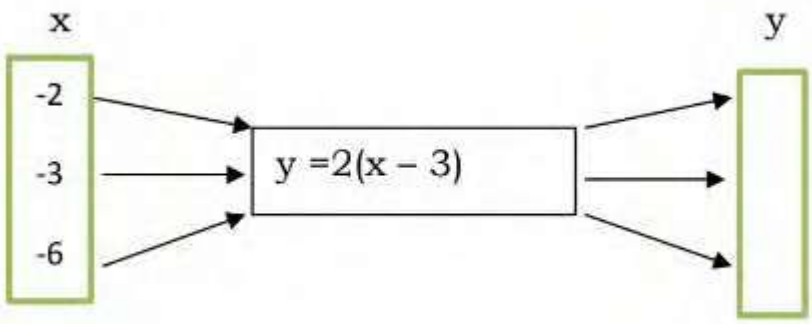
QUESTION 2			
2.1.	Calculate the following:		
	2.1.1.	$13 - 8 + 27 \times 3$	(2)
	2.1.2.	$3\frac{2}{5} - \frac{3}{7}$	(3)
	2.1.3.	$0.213 + 12.01 - 7{,}87 \times 0.5$	(2)
2.2.	Simply without using a calculator		
	2.2.1.	$\sqrt[3]{125} - \sqrt{\frac{1}{4}}$	(3)
	2.2.2.	$(-5)(-2) - (-7) - 2^2$	(3)
2.3		The ratio of women engineers to men engineers in a construction company is 3:8. There are six women engineers. How many men engineers are there?	(4)
2.4.	The cost of breakfast cereal is R35 for 1 kg. Calculate how much 250 g of breakfast cereal will cost.		(3)
2.5.	Ralph deposits R450 in a new savings account. No further deposits or withdrawals are made. Calculate the interest he will earn after 6 years at 4,75% simple interest		(4)
2.6.	A pair of jeans priced at R550 is put on sale for 25 % discount. How much is the new price?		(3)
2.7.	Mr Catch saves money for his intended relocation to Britain. He keeps himself updated with the exchange rates by watching the daily business news on TV. On a particular day the Rand/ Pound exchange rate was £1= R18, 40. How many pounds will he get in exchange for his savings of R500 000?		(3)
			[30]

QUESTION 3			
3.1.	Write these expanded in exponential form:		
	3.1.1.	$a \times a \times a \times a \times b \times b \times b$	(1)
3.2.	Simplify the following:		
	3.2.1.	$x^2 \times x^0 \times x^3$	(2)
	3.2.2.	$\sqrt[3]{1000} \div \sqrt[3]{8} + (7-5)^2$	(2)
	3.2.3.	$\frac{n^6.m^4.n^4.m^2}{n^2.m^6.n^4.n^0}$	(4)
	3.2.4.	$(-5x^5y^2) \times (3x^2y^4)(-2x)$	**(3)**
			[12]
QUESTION 4			
4.1.	Study the following sequence and answer the questions that follows:		
		2 ; 5 ; 8 ;	
	4.1.1.	Write down the next two terms.	(2)
	4.1.2.	Determine the general term ($T_n = \cdots\cdots$) to describe the above sequence.	(2)
	4.1.3.	Find the 15th term (T_{15}) by using the general term found in question 4.1.2.	(2)
4.2		The following pattern is obtained by placing match sticks as shown in the diagram:  1 2 3	
	4.2.1.	Draw pattern 6.	(2)

	4.2.2.	Determine the values of $\boldsymbol{a}$ and $\boldsymbol{b}$ in the table: | Pattern	1	2	3	4	10
---	---	---	---	---	---
Number of match sticks	4	7	10	$\boldsymbol{a}$	$\boldsymbol{b}$		(3)
			[11]

QUESTION 5

5.1 Study the flow diagram and **calculate the output values of** y (4)



5.2 Consider the table below and answer the questions that follows:

$y = x^2 + 2$

x	-1	0	1	2		***b***
y	***a***	2	3	6		51

Consider the table above and answer the questions that follows:

5.2.1 Write down the value(s) of a and b (4)

5.2.2 Determine the y (output) value when x (input) value is 12 (1)

5.3 Consider the algebraic expression below and answer the following questions.

$$\mathbf{9x^2 + 1 - 2x - x^3}$$

5.3.1 How many terms are given in the expression? (1)

5.3.2 What is the coefficient of x^3 (1)

5.3.3 Write down the constant term (1)

5.3.4 Determine the value of the expression if $x = 2$ (2)

5.4 Write down the algebraic expression for the following:

5.4.1 The difference of a certain number and 1 (1)

5.4.2 Twice the product of two numbers increased by 6 (2)

[17]

TOTAL: 75

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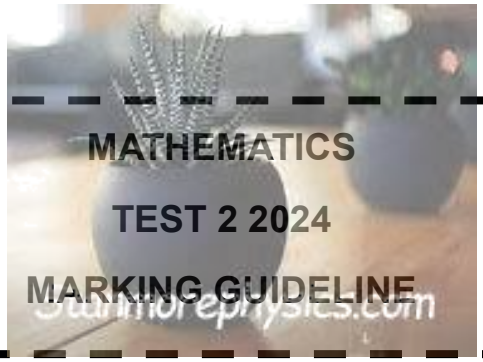

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QUESTION 1			
1.1.			
	1.1.1	C✓	(1)
	1.1.2.	C✓	(1)
	1.1.3.	D✓	(1)
	1.1.4.	B✓	(1)
	1.1.5.	D✓	(1)
			[05]

QUESTION 2			
2.1			
	2.1.1	13 – 8 + 27 x 3 = 86✓✓	(2)
	2.1.2	$3\frac{2}{5}-\frac{3}{7}$ $=\frac{17}{5}-\frac{3}{7}$✓ $=\frac{119-15}{35}$✓$=\frac{104}{35}$ $=2\frac{34}{35}$✓	(3)
	2.1.3	0,213 + 12, 01 – 7,87 x 0,5= 8,29✓✓	(2)
2.2			
	2.2.1	$\sqrt[3]{125}-\sqrt{\frac{1}{4}}$ $=5$✓$-\frac{1}{2}$✓ $=4\frac{1}{2}$✓	(3)
	2.2.2	$(-5)(-2)-(-7)-2^2$	(3)

		$= 10 + 7 - 4$✓✓ $= 13$✓	
2.3			
	2.3.1	$\frac{3}{8} = \frac{6}{x}$✓ $3x = 48$✓ $x = 16$✓ $16\ men$✓	(4)
2.4	$1kg = R35$ $250\ g = 0.25kg$✓ $= \frac{0.25kg \times R35}{1kg}$✓ =R8.75✓		(3)
2.5	**I**= Prt ✓ $= 450 \times \frac{4,75}{100} \times 6$✓✓ =R128,25✓		(4)
2.6	Discount= R550 $\times \frac{25}{100}$ ✓ = R137,50 ✓ New price=R550-R137,50 =R412,50✓		(3)
2.7	He will get $= \frac{R500000}{R18,40}$ ✓ = £ 27 173, 91 ✓✓		(3)
			[30]

QUESTION 3			
3.1.	Write these in expanded form:		
	3.1.1.	$a^4 \times b^3$ ✓	(1)
3.2.	Simplify the following:		
	3.2.1.	$x^0.x^2.x^3$ $= 1.x^{3+2}$ ✓ $= x^5$ ✓	(2)
	3.2.2.	$\sqrt[3]{1000} + \sqrt[3]{8} + (7-5)^2$ $= 10 + 2 + 4$ ✓ $= 16$ ✓	(2)
	3.2.3.	$\frac{n^6.m^4.n^4.m^2}{n^2.m^6.n^4.n^0}$ $= n^{6+4-2-4}.m^{4+2-6}$ ✓✓ $= n^4.m^0$ ✓ $= n^4$ ✓	(4)
	3.2.4	$(-5x^5y^2) \times (3x^2y^4)(-2x)$ $= 30x^8y^6$ ✓✓✓	(3)
			[12]

QUESTION 4			
4.1.	Study the following sequence and answer the questions that follows:		
	4.1.1.	11 ✓ 14 ✓	(2)
	4.1.2.	$T_1 = 3(1) - 1 = 2$ $T_2 = 3(2) - 1 = 5$ $T_3 = 3(3) - 1 = 8$ $\therefore T_n = 3n - 1$ ✓✓	(2)

	4.1.3.	$T_{15} = 3(15) - 1$ ✓ $\therefore T_{15} = 44$✓	(2)
4.2.		Study the following geometric pattern	
	4.2.1.	✓✓ 	(2)
	4.2.2.	$a = 13$✓ $b = 31$ ✓✓	(3)
			[11]

QUESTION 5			
5.1		$x = -2$; $y = 2(-2-3)$✓ $y = -10$✓ $x = -3$; $y = 2(-3-3)$ $y = -12$✓ $x = -6$; $y = 2(-6-3)$ $y = -18$✓	(4)
5.2			
	5.2.1	$a = 3$✓✓ $b = 7\sqrt{}$ or $b = -7\sqrt{}$	(4)
	5.2.2	$y = (12)^2 + 2$ $y = 146$✓	(1)
5.3			
	5.3.1	**4**✓	(1)
	5.3.2	-1✓	(1)
	5.3.3	1✓	(1)
	5.3.4	$= 9(2)^2 + 1 - 2(2) - (2)^3$✓ $= 25$✓	(2)
5.4			
	5.4.1	$x - 1$✓	(1)
	5.4.2	$2(xy)$✓$+6$✓	(2)
			[17]
		TOTAL: 75	