Hillcrest High School

Grade 8

MATHEMATICS

NOVEMBER 2025

MARKS: 120 **TIME:** 2 Hours

NAME:_____ **CLASS:**_____

TEACHER:

Oosthuyzen	Stow	Mbuyazi
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QUESTION	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**TOTAL**
MARK	**11**	**14**	**26**	**5**	**13**	**3**	**3**	**12**	**20**	**13**	**120**
MARKS											
SIGN											

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions

1. This exam consists of 10 questions and 11 pages.
2. Read all questions carefully before answering.
3. Answer ALL the questions in the space provided.
4. Clearly show ALL calculations, diagrams, graphs, etc. which you have used in determining your answers.
5. Answers only will NOT necessarily be awarded full marks.
6. You may use an approved scientific calculator (non-programmable and non-graphical), unless stated otherwise.
7. If necessary, round off answers correct to TWO decimal places, unless stated otherwise.
8. Diagrams are not necessarily drawn to scale.
9. Write neatly and legibly.

QUESTION 1

1.1	Using the following list of numbers; -4 | -2 | 0 | 1 | 3 | 4 | 11 | 12 | 25 | 30 Write down: (Numbers may be used more than once)	
1.1.1	The prime numbers:	(2)
1.1.2	The multiples of 3:	(2)
1.1.3	The factors of 30:	(2)
1.1.4	The perfect square(s):	(2)
1.2	Complete each of the following:	
1.2.1	$11 - \_\_\_\_ = 9$	(1)
1.2.2	$11 - \_\_\_\_ = 13$	(1)
1.2.3	$4 + \_\_\_\_ = -5$	(1)

[11]

QUESTION 2

2.	Calculate each of the following, showing all working:	
2.1	$\frac{2}{3} - \frac{1}{2}$	(2)
2.2	$\frac{1}{4} \times \frac{2}{5}$	(2)

2.3	$\frac{2}{3} \div \frac{6}{7}$	(2)
2.4	$1\frac{2}{3} + 2\frac{3}{8}$	(4)
2.5	$\frac{1}{3} + \frac{2}{5} \times 1\frac{3}{7}$	(4)

[14]

QUESTION 3

3.1	Simplify the following:	
3.1.1	$3(x-5)$	(2)
3.1.2	$2(5+3x)-4(3-x)$	(4)
3.1.3	$3b \times 5b^4$	(2)
3.1.4	$8x+2-4x+3y$	(2)
3.1.5	$\frac{8y^5}{40y^3}$	(3)
3.1.6	$(-3x^2y^4)^3$	(3)
3.1.7	$\frac{2a^2c^3 \times 3ac^4}{12a^5c^5}$	(4)
3.1.8	$\sqrt{25x^6}+\sqrt{16y^8}$	(2)

3.2	Write an algebraic expression for each of the following:	
3.2.1	The sum of two different numbers	(2)
3.2.2	A number multiplied by 12	(2)

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QUESTION 4

4.1	Calculate the value of the following expression if $a = 2,\ b = -3\ and\ c = 0$	
4.1.1	$4c + b - 5^c$	(3)
4.1.2	$3a^4 \times \frac{bc}{a}$	(2)

[5]

QUESTION 5

5.1	Write the following ratios in their simplest form:	
5.1.1	$36 : 18 : 90$	(2)

5.1.2	Share 63 into the ratio 5:4	(3)
5.1.3	$\frac{1}{2}$: 0,45	(3)
5.1.4	Increase 49 in the ratio 7:9	(2)
5.1.5	12 learners in a class of 32 are left-handed. Write the ratio of left-handed: right-handed learners in a ratio in its simplest form.	(3)

[13]

QUESTION 6

6.1	Express 576 as a product of its prime numbers:	(3)

[3]

QUESTION 7

7.1	Write in scientific notation: 35 600 000 000	(2)
7.2	Write in standard notation: $2{,}408 \times 10^5$	(1)

[3]

QUESTION 8

8.1	Convert the following:	
8.1.1	$\frac{2}{5}$ into a percentage	(1)
8.1.2	0,67 into a percentage	(1)
8.1.3	64% into a fraction in simplest form	(2)

8.1.4	Emily buys a dress for R275, after a few months she sells it and makes a 15% profit. How much did she sell the dress for?	(4)
8.1.5	24% of the cargo on a plane is luggage. If the luggage is 312kg, calculate the total weight of the cargo.	(4)

[12]

QUESTION 9

9.1	Solve for x, where $x \in \mathbb{R}$ Show all working out:	
9.1.1	$4x - 8 = 12$	(2)
9.1.2	$3x - 8 = 4 - 5x$	(3)

9.1.3	$5(x + 4) - 6 = 2(x + 4)$	(4)
9.1.4	$\frac{x + 2}{3} = 7$	(3)
9.1.5	$\frac{2x}{5} = 3$	(2)
9.1.6	$\frac{x}{4} + 5 = x - 1$	(4)

9.1.7	$3x + 2 = 3(x - 4)$	(2)

[20]

QUESTION 10

10.1	Write down the next two numbers in the following sequences:	
10.1.1	-4 ; -2 ; 0 ; 2 ; ____ ; ____	(2)
10.1.2	25 ; 24 ; 22 ; 19 ; 15 ; ____ ; ____	(2)
10.1.3	3 ; 6 ; 12 ; 24 ; ____ ; ____	(2)
10.2	Using the following sequence 5 ; 9 ; 13 ; 17 …	
10.2.1	Write the rule (Tn):	(2)
10.2.2	Find the 10^{th} term of the sequence:	(2)
10.2.3	Determine if 63 is a number in the sequence:	(3)

[13]