

HILLCREST HIGH SCHOOL



HILLCREST HIGH SCHOOL
INTERNAL ASSESSMENT

GRADE 8

MATHEMATICS
November Examination
Paper 1

Marks: 130

Time: 2 hours

NAME:											CLASS:		
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Total	%
10	2	9	5	26	7	24	20	8	5	6	8	130	

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions

1. This examination consists of 12 questions and 15 pages.
2. Answer ALL the questions in the space provided.
3. Clearly show ALL calculations, diagrams, graphs, etc. which you have used in determining your answers.
4. Answers only, will NOT necessarily be awarded full marks.
5. You may use an approved scientific calculator (non-programmable and non-graphical), unless stated otherwise.
6. If necessary, round off answers correct to TWO decimal places, unless stated otherwise.
7. Write neatly and legibly.

Question 1**Multiple Choice.**

Choose the correct answer and write the corresponding letter in the Answer column.

Answers:

1.1 The only prime number which is even is:

A. 8	B. 2
C. 16	D. 44

1.2 $2^2 - 3 + 6 \div 2$ is equal to:

A. 4	B. 0
C. $\frac{7}{2}$	D. 9

1.3 What is the equation used for the table below

x	4	3	2	1	0	-1
y	5	3	1	-1	-3	-5

A. $y = 2x - 3$	B. $y = 2 - 3x$
C. $y = 2 + 3x$	D. $y = 2x + 3$

1.4 Find the value of $3y^2 - 6y + 1$, when $y = 3$.

A. 14	B. 12
C. 10	D. 8

1.5 72 decreased in a ratio of 3:4 is:

A. 30,86	B. 96
C. 41,14	D. 54

1.6 $\frac{m^5 p^3}{p^2 m^2}$ simplified is:

A. $\frac{m^7}{p}$	B. $m^3 p$
C. $\frac{m^3}{p^3}$	D. $m^7 p^5$

1.7 17,65374 rounded to 3 decimal places is:

A. 17,65474	B. 17,654
C. 17,653	D. 17,650

1.8 The symbol missing between $10 - 7 \square - (10 - 7)$ is

A. >	B. <
C. =	D. \geq

1.9 An island has a mountain which is 1 300m high. The surrounding ocean has a depth of 740m. What is the difference in height?

A. 660m	B. 2140m
C. 560m	D. 2040m

1.10 A certain number is doubled and increased by twenty. The answer is ten less than three times the number. Determine the number.

A. 30	B. 17
C. 2	D. 6

Question 2

Add in one set of brackets to make the following calculations true.

2.1 $8 + 6 \times 5 = 70$

2.2 $5 + 8 \times 6 - 2 = 37$

[2]

Question 3

From the given list: 2 ; 5 ; 8 ; $\sqrt{3}$

3.1 List the Natural Numbers

(2)

3.2 List the multiples of 2

(2)

3.3 List the factors of 10

(2)

3.4 List the prime numbers

(2)

3.4 List the irrational number

(1)

[9]

Question 4

Calculate the following, showing all working:

4.1

$$\frac{2}{3} + \frac{1}{4}$$

(3)

4.2

$$1\frac{2}{5} \times \frac{10}{3}$$

(2)

[5]

Question 5**Calculate the following; show all working.**

5.1 Simplify the following ratio:

$$3\frac{1}{3} : \frac{1}{2}$$

(3)

5.2 If the ratio of water : juice is 4 : 1, and 200ml of juice used; calculate the amount of water needed.

(2)

5.3 A furnisher buys a chair at a cost price of R 250 at a wholesaler and sells it at R 325.

5.3.1 Calculate his profit made in rands. (1)

5.3.2 Calculate the profit as a percentage of the cost price. (3)

5.4 Calculate the new selling price of a TV costing R 5 849 if it is discounted by 20%. (3)

5.5 A car travels a distance of 360km in 4 hours on a straight road. How many kilometres can it travel in 3 hours at the same speed? (3)

5.6 On an average weekend in the previous years 540 people visited Ushaka Marine World. (3)
The number of visitors has decreased this year by 30%. Calculate the number of people who now attend Ushaka Marine World on an average weekend.

5.7 Paul; Nathan and Sphe worked in Mr Tesati’s garden to earn extra money. Paul worked (3)
for 5 hours; Nathan for 4 hours and Sphe for 3 hours. Mr Tesati gave the boys R 600 for their work. How much money will Nathan get if they shared the money in a ratio of hours worked.

5.8 Jabu invests R 4 600 for 2 years at an interest rate of 8% p.a.

5.8.1 Calculate the amount of interest earned in one year. (1)

5.8.2 Calculate the amount of interest earned in 2 years. (2)

5.8.3 Calculate the value of the investment after the 2 years. (2)

Question 6

Given the following expression; answer the questions that follow:

$$-2xy - x^3y^2 + 3x^2y^3 - 4$$

6.1 How many terms does the expression have? (1)

6.2 Write down the constant in the expression. (1)

6.3 Write down the coefficient of xy . (1)

6.4 What is the exponent of the x in the first term? (1)

6.5 Determine the value of the expression if $x = -1$ and $y = 2$. All working must be shown. (3)

[7]

Question 7

Simplify the following:

7.1 $12m - 3t + 5m - 7t$ (2)

7.2 $2(a + 3) - 4(a - 2)$ (4)

7.3 $-5(2x^2 + x - 20) + 12x^2 + 4x$ (3)

7.4 $\sqrt{25x^4 - 16x^4}$ (3)

7.5 $\sqrt{25x^4} - \sqrt{16x^4}$ (2)

7.6

$$\frac{20a^4 - 4a^3 + 6a}{2a}$$

(3)

7.7

$$(-6x^3y^2)(5x^4y^2)(-2x)$$

(3)

7.8

$$\frac{6x^3 \times (-4x^2)}{-12x} - (2x)^4$$

(4)

Question 8
Solve for x :

8.1 $2x + 4 = 10$ (2)

8.2 $4x + 5 = 5x - 9$ (2)

8.3 $2x = 3x - 5$ (2)

8.4 $4(x + 1) = 2(x - 6)$ (3)

8.5

$$5(x - 1) - (1 - 2x) = 8$$

(4)

8.6

$$\frac{3(x - 2)}{4} = 2x - 3$$

(3)

8.7

$$\frac{x}{2} = 4\frac{1}{2}$$

(2)

8.8

$$3^x = 9$$

(2)

[20]

Question 9

9.1 The sum of three consecutive natural numbers is 33. Determine the three numbers. Show all working. (4)

9.2 Thando is six years older than Sophie. In three years Thando will be twice as old as Sophie. How old is Thando now? Show all calculations. (4)

[8]

Question 10

10.1 Solve for x : $3x - 1 = 8$ (2)

10.2 Hence solve for y : $3\sqrt{y} - 1 = 8$ (3)

[5]

Question 11

11.1 Find the value of x and y in the following sequence: (2)
 $7; 2; -3; x; y; \dots$

11.2 Examine the given x and y values and determine the relationship between x and y . Then find the values of a and b .

x	1	2	3	4	a	10
y	4	7	10	13	22	b

11.2.1 $y =$ _____ (2)

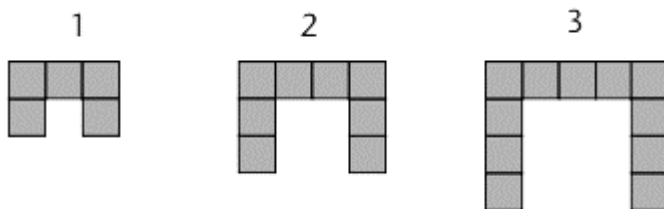
11.2.2 $a =$ _____ (1)

11.2.3 $b =$ _____ (1)

[6]

Question 12

Look at the patterns below.



12.1 If the pattern continues in the same way state how many squares will be in the next three diagrams. (3)

12.2 Write a mathematical rule for the number pattern written in Question 10.1 (2)

12.3 How many squares will be in the 20th picture? Show all calculations. (3)

[8]

Grand Total: 130 marks