HILLCREST HIGH SCHOOL

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INTERNAL ASSESSMENT

GRADE 8

MATHEMATICS
June Examination

NAME :														CLASS:			
TEACHER:														DATE:			
Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15		TOTAL	%
12	9	5	8	6	2	22	8	4	8	5	6	17	4	4		120	

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions

1. This examination consists of 15 questions and 14 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 $-4 + (-6) =$

A. -10	B. 2
C. 10	D. -2

1.2 $3 \times \square = -12$

The missing value is:

A. 4	B. -4
C. 36	D. -36

1.3 Which of the following is NOT a simplified ratio?

A. $3:5$	B. $0{,}2:3$
C. $10:1$	D. $5:7$

1.4 $13 - 6 \times \square = -35$

The missing value is:

A. -5	B. 8
C. -8	D. $\frac{11}{3}$

1.5 $x^4 + x^4 =$

A. x^8	B. $2x^4$
C. x^{16}	D. $2x^8$

1.6 $\sqrt[3]{-27} =$

A. $non-real$	B. 3
C. -3	D. $undefined$

1.7 $\square + 14 \times 3 = 51$

The missing value is:

A. 3	B. 9
C. 12,33	D. 93

1.8 $\square\% \; of \; 60 = 42$

The missing value is:

A. 18	B. 142,86
C. 0,7	D. 70

1.9 $0{,}2 - x = 0{,}8$

The value of x is:

A. $-0{,}6$	B. 1
C. -1	D. 0,6

1.10 $\sqrt{49} + \sqrt{x} = 13$

The value of x is:

A. 6	B. -36
C. 36	D. -6

1.11 Insert the following symbol to make the statement true:

$$\frac{2}{5} \square \frac{6}{15}$$

A. $>$	B. $<$
C. $=$	D. $+$

1.12 The value of $\frac{18}{0}$ is:

A. 18	B. $undefined$
C. $non-real$	D. 0

[12]

Question 2

Answer True or False for each of the following statements:

		True / False
2.1	$\frac{3}{5} \div \quad x \quad = \frac{-5}{3}$ The value of x is $\frac{-9}{25}$	
2.2	All of the factors of 30 are: $2; 3; 4; 5; 6; 10; 12; 15$	
2.3	The first five multiples of 36 are: $1; 2; 3; 4; 6$	
2.4	57 and 59 are both prime numbers.	
2.5	The prime factors of 120 are: $2; 3; 5$	
2.6	The associatiative property states the following: $(3 + 8) + 12 = 3 + (8 + 12)$	
2.7	$2{,}567$ rounded to the nearest 2 decimal places is $2{,}56$	
2.8	The rule for the following number pattern is $Tn = 3n - 4$ $-4; -1; 2; 5;$ ...	
2.9	$2x - 7$ In the given expression the coefficient is 2.	

[9]

Question 3

Calculate the following; show all working.

3.1 $2\frac{3}{4} - \frac{5}{7}$ (3)

3.2 $\frac{3}{5} \div \frac{7}{15}$ (2)

[5]

Question 4

Convert the following:

4.1 $\frac{1}{4}$ *into a percentage* (2)

4.2 0,084 *into a percentage* (2)

4.3 60% *into a fraction* (2)

4.4 24,5% *into a decimal fraction* (2)

[8]

Question 5

Answer the following questions. Show all working.

5.1 The price of a washing machine is decreased / discounted by 12% at a sale. Calculate the new price if the original price was R 5 490 (3)

5.2 Calculate the percentage decrease if the price of a cellphone goes down from R 7 200 to R 6 400. (3)

[6]

Question 6

Fill in $<$; $>$ or $=$ to make the statements true:

6.1 $4 + 6 \times 3 \square (4 + 6) \times 3$ (1)

6.2 $\sqrt[3]{-64} \square \sqrt{64}$ (1)

[2]

Question 7

7.1 Simplify the following ratios:

7.1.1 $120:132:144$ (2)

7.1.2 $12cm:1m$ (2)

7.1.3 $\frac{1}{5}:\frac{2}{3}$ (3)

7.2 In a herd of elephants there are 15 baby elephants and their ratio of mother : babies are 3:2. (3)
How many mother elephants would there be in the herd?

7.3 The number of unemployed people has increased in a ratio of 4: 5. If there is now an unemployment rate of 35%, what was the previous unemployment rate? (3)

7.4 A car travels 420 km in 4 hours and 30 minutes.

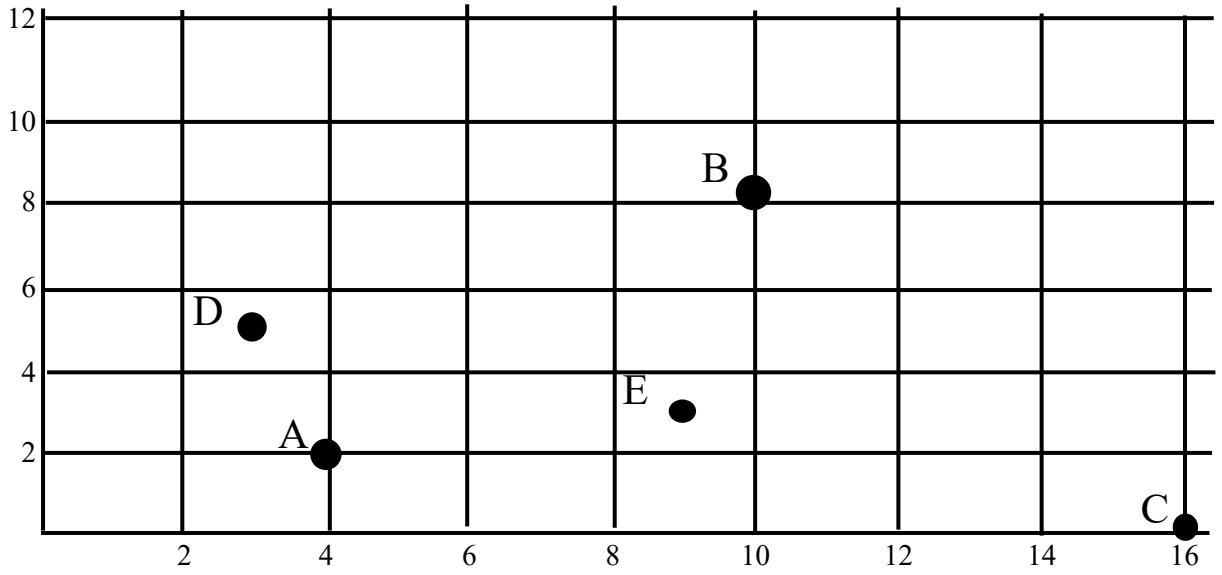
7.4.1 Calculate the time in hours. (2)

7.4.2 Calculate the speed of the car rounded to the nearest whole number. (3)

7.5 An amount of R 60 000 was won in a competition and split between three players in a ratio of 2: 3: 4. (4)
Give the value of the person's winnings who received the smallest portion. Round off to the nearest hundred rands.

[22]

Question 8



Use the diagram above to answer the following questions.

8.1 Give the co-ordinates of the following: (5)

A : _____

B : _____

C: _____

D: _____

E: _____

8.2 Plot the following co-ordinates on the cartesian plane above. (3)

F: $(10; 4)$

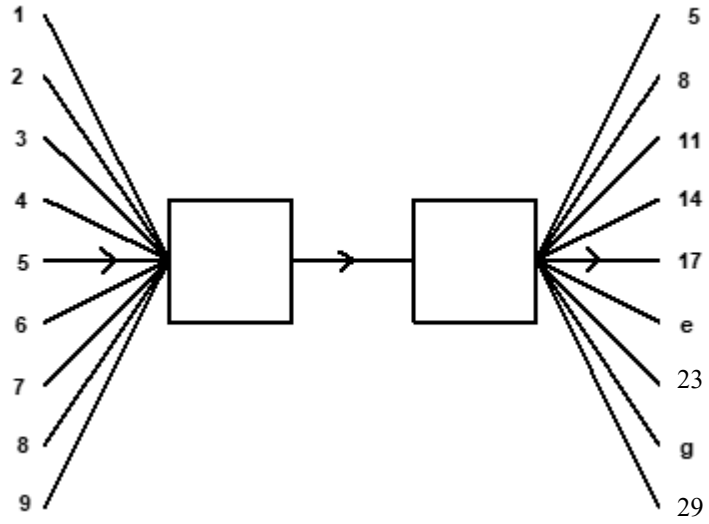
G: $(12; 5)$

H: $(0; 11)$

[8]

Question 9

9.1 Complete the given flow diagram by filling in the computing procedure. (2)

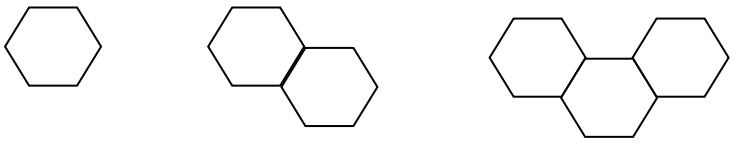


9.2 Calculate the value of e and g from the flow diagram. (2)

[4]

Question 10

Look at the patterns below which have been made from matchsticks.
The first shape, called a hexagon, is made from 6 matchsticks.



10.1 Complete the table below using the pattern. (3)

No. of hexagons (h)	1	2	3	5	10
No. of matchsticks (m)	6		16		

10.2 Write a mathematical rule to help you calculate the number of matchsticks (**m**) needed to make a chain of **h** hexagons. (2)

10.3 How many matchsticks are needed to create a chain of 100 hexagons? (2)

10.4 Answer **true / false** to the following statement: (1)

82 matchsticks will be enough to make a chain of complete hexagons.

[8]

Question 11

Given the following expression, answer the questions that follow:

$$3a^2 - 5b - 4$$

11.1 Only using the first term in the expression; answer the following questions:

11.1.1 Write the coefficient. (1)

11.1.2 Write the base of the term. (1)

11.1.3 Write the term out in full. (2)

11.2 Write the constant of the expression. (1)

[5]

Question 12

Write an algebraic expression for each of the following:

12.1 Add a number to -9 (2)

12.2 Multiply two different numbers by 4 (2)

12.3 Divide 8 more than a number, by 3 (2)

[6]

Question 13

Simplify the following algebraic expressions.

13.1 $3 \times 2 \times x \times 5$ (2)

13.2 $20m \times 2m \div 4$ (2)

13.3 $3 \times a + 3 \times b - 5 \times a$ (2)

13.4 $4y - 3y^2 + 2y + y^2 - 2y$ (2)

13.5 $b^6 \div b^2$ (1)

13.6 $x(3xy^3)^2$ (3)

13.7 $4x^2 \times 12x^5$ (2)

13.8 $\sqrt{25x^4 - 16x^4}$ (3)

[17]

Question 14

Calculate the value of the following expression if $a = 2$ and $b = -3$. All working must be shown.

14. $$3a^4 \times \frac{b}{a}$$ (4)

[4]

Question 15

A family wishes to go away on holiday.
The accommodation costs R 1 200 plus R 800 per night.

15.1 Write an algebraic expression for the total cost (t) for any number of nights (n) (2)

15.2 The family decides to go away for 5 nights, calculate the total cost of the accommodation. (2)

[4]