

# HILLCREST HIGH SCHOOL



**HILLCREST HIGH SCHOOL  
INTERNAL EXAM**

**GRADE 10**

**MATHEMATICAL LITERACY**

**TERM 4**

**NOVEMBER PAPER 1**

Name: \_\_\_\_\_

Teacher: \_\_\_\_\_

Duration: 1½ Hours

Marks: 75

Examiner: Mrs A Jugmohan-Chonnoolal

Moderator: Ms G Stow

**This question paper consists of 13 pages.**

QUESTION	1	2	3	4	TOTAL
MARK	14	25	25	11	75

## **INSTRUCTIONS AND INFORMATION**

Read the following instructions carefully before answering the questions.

1. This Exam consists of 4 questions.
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. Refer to **ANNEXURE A** for Question 4
7. If necessary, round off answers correct to TWO decimal places, unless stated otherwise.
8. Write neatly and legibly.

**QUESTION 1 [14 MARKS]**

- 1.1 Nosipho Khumalo is a grade 10 learner at Downtown High School. She is preparing for a sports day function. She will be baking cupcakes. Below is the recipe that she will use.

**INGREDIENTS (1 DOZEN CUPCAKES)**

- 1 ½ cups flour
- ¾ cup sugar
- 2 tsp baking powder
- ½ tsp salt
- ½ cup milk
- ½ cup oil
- 2 eggs
- 1 tsp vanilla essence

PREPARATION TIME : 15 MINUTES

BAKING TIME : 15 MINUTES

**INGREDIENTS: BUTTER CREAM ICING**

- 125 g margarine
- 2 cups icing sugar
- 2 tablespoons milk
- Cocoa or food colouring

**NOTE :**

1 cup = 250ml

1 teaspoon = 5ml

1 tablespoon = 15ml

- 1.1.1 How many cupcakes can be made using one batch of the above recipe. (Provide an actual number) (2)

---

---

HHS

1.1.2 Convert the amount of milk needed to millilitres. (2)

---

---

---

1.1.3 Nosipho iced the cupcakes using pink, green and blue icing. If there are 24 pink, 12 green and 36 blue cupcakes, what is the probability (as a simplified fraction) of her randomly selecting a green cupcake. (2)

---

---

---

1.1.4 Nosipho made a total amount of R690 from the sales of the cupcakes. If  $\frac{2}{3}$  of the sales was profit, calculate (in rands) how much profit she made. (2)

---

---

---

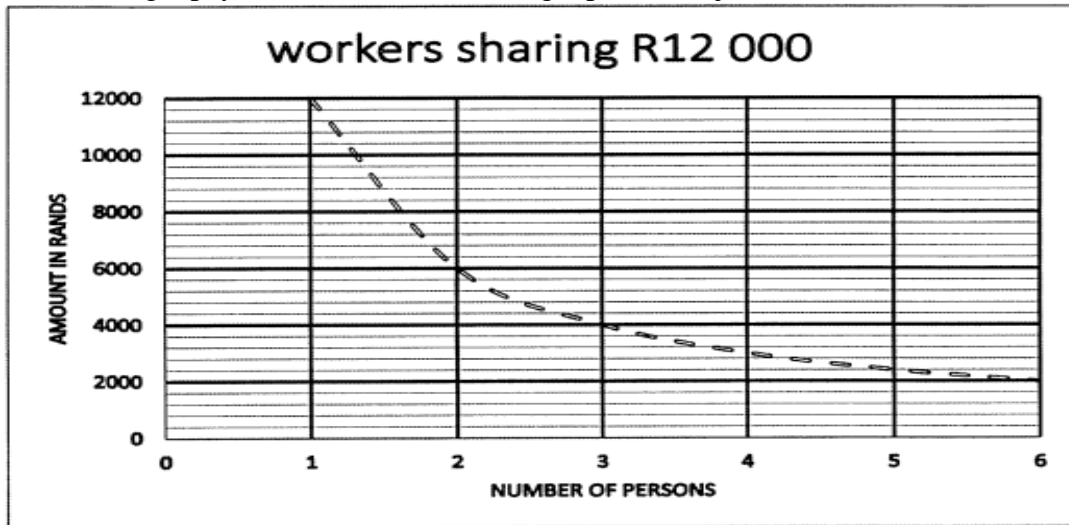
1.2 In 2017, Statistics South Africa reported that there were 17 004 986 Secondary school learners in the country. Write down the number of learners in words (2)

---

---

---

1.3.1 The graph below shows the relationship between the amount each worker receives after sharing a payout of R12 000 for doing a particular job.



What type of proportion is represented on the graph

(2)

1.3.2 **Circle** which of the following formulas will be the best to represent the graph above. *Note: Only circle one.*

(2)

A:  $\text{Amount} = \frac{\text{R12 000}}{\text{number of persons}}$

B:  $\text{Amount} = \text{R12 000} \times \text{number of persons}$

## QUESTION 2 [25 MARKS]

2.1 All the grade 10 learners at Downtown High School made a total of R4 500 at the sports day. They want to invest their money as they would like to revamp the grade 10 quad in their school. They were given the following options:

OPTION 1:  
ABC Bank  
6,3% Simple interest  
2 Years

OPTION 2:  
XYZ Bank  
5,8% Compound interest  
2 Years

2.1.1 Calculate the total amount the learners will receive at the end of two years if they choose option 1. Show all calculations. (3)

---

---

---

---

---

2.1.2 The following table represents the interest calculations for Option 2: (Show working) (4)

<b>YEAR</b>	<b>INITIAL AMOUNT</b>	<b>INTEREST EARNED</b>	<b>FINAL AMOUNT</b>
1	R4 500	<b>A</b>	R4 761
2	R4 761	R276, 14	<b>B</b>

Calculate the missing values:

**A** =

---

**B** =

---

---

2.1.3 The children stated that XYZ Bank is a better bank to invest their money. Verify whether they are correct. Show calculations (3)

---

---

---

---

HHS

2.2 Uptown School has a total of 550 learners. They also raised funds for their school by having a Fun Day. They raised an amount of R28 000. Meals were budgeted at R25 per learner. Sound and entertainment cost 10% of the total amount raised. The local community donated R8 800. The sport stadium cost double the amount spent on banners and tags.

INCOME		EXPENSE	
Fund raising	R28 800	Hire of Stadium	<b>A</b>
Donations	R8 800	Meals	<b>B</b>
		Banners & Tags	R2 000
		Sound & entertainment	<b>D</b>
		Admin	R350
Total	<b>C</b>		
Amount left over after expenses have been paid			<b>E</b>

2.2.1

(10)

Calculate the values indicated by A, B, C, D, E

**A** =

---

**B** =

---



---

**C** =

---



---

**D** =

---



---

**E** =

---



---



---

HHS

2.2.2 Verify whether a surplus or deficit was made and substantiate your answer with calculations. (3)

---



---



---

2.3 What is the difference between a budget and an Income & Expenditure statement? (2)

---



---



---



---

**QUESTION 3 [25 MARKS]**

3.1 Mr Ally lives the Umzinyathi District. The water tariffs for this municipality is shown below. Note: All tariffs below exclude 15% VAT

<u>Industrial/ Business consumer</u>	<u>Residential consumer</u>	
	<u>Water used</u>	<u>Cost per kl used</u>
Flat rate of R 8,21 per kl used (No free water allowance)	0 – 6 kl	Free
	>6 – 20 kl	R8,03
	>20 – 40 kl	R10,11
	>40- 60kl	R15,28
	>60kl	R 18,50

3.1.1 Mr Ally is classified as a residential consumer. He received a water bill with the following information (2)

<u>WATER BILL READING IN KL</u>		
<u>READING DATE</u>	<u>PREVIOUS READING</u>	<u>CURRENT READING</u>
15 SEPTEMBER 2019	4541 KL	4598 KL

HHS

Show that Mr Ally used 57kl of water.

---

---

3.1.2 Mr Ally was charged R660,54 (including VAT) for the above water reading. (5)  
Verify with calculations if the amount charged was correct.

---

---

---

---

---

---

---

---

---

---

3.1.3 Suggest why businesses are charged a flat rate whereas residential consumers (2)  
are charged differently.

---

---

---

---

HHS

3.2 Below are the mass (kg) of a soccer team, including their reserve players.

60,2	67,5	69	70,3	65	67,3	70,5	59,6
64	59,5	55,2	65	60,7	53	65	58,5

3.2.1 Is the above data discrete or continuous? Give a reason for your answer (2)

---

---

3.2.2 Verify that the median is 64,5. (2)

---

---

---

---

3.2.3 Calculate the mean weight of the players (2)

---

---

---

3.2.4 Determine the range of the above data (2)

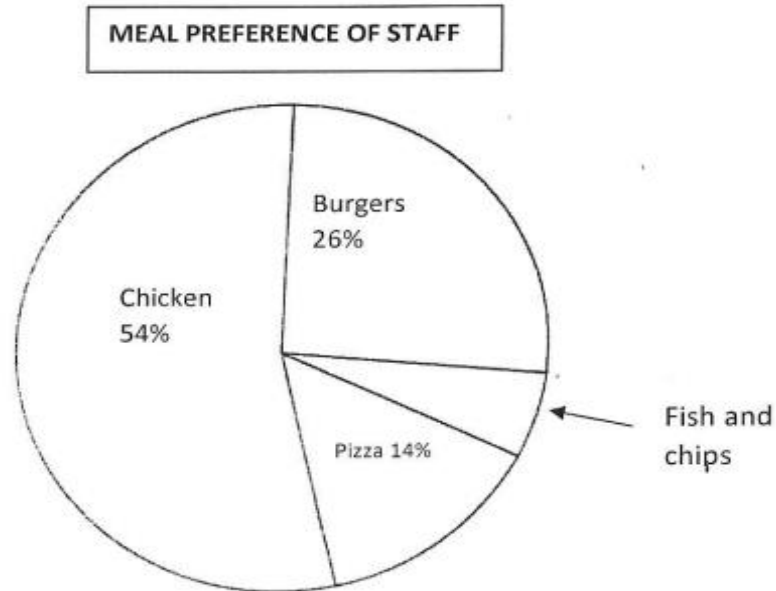
---

---

3.2.5 What is the mode? (2)

---

3.3 Mr Louw is the Director of a business. On the announcement of his promotion he decides to buy his colleagues lunch. The pie chart below shows the results of a survey he conducted amongst 50 of his staff members to determine their favourite meal.



3.3.1 Verify that 6% of the staff prefer fish and chips? (2)

---

---

3.3.2 If there are 50 people altogether, how many chose pizza? (2)

---

---

---

3.3.3 How many more people prefer chicken to pizza? (2)

---

---

---

**QUESTION 4 [11 MARKS]**

- 4.1 A University coach collected some information about the favourite sport of students in order to prepare for the new year. The tables below show the results of the survey for the boys and girls.

**TABLE 1 : BOYS**

S	C	S	S	S
S	S	S	S	S
V	S	V	S	S
V	V	S	V	V
V	S	C	C	C
V	C	N	C	S
S	V	V	V	V
S	N	S	V	V

**TABLE 2 : GIRLS**

S	N	V	N	N
N	N	N	N	N
S	S	N	N	V
V	S	V	N	S
S	C	N	V	N
C	C	V	C	C
C	V	S	S	C
V	S	V	S	V

**KEY**

S – SOCCER

V- VOLLEYBALL

N – NETBALL

C - CRICKET

- 4.1.1 Complete the tally table on **ANNEXURE A** (6)
- 4.1.2 Construct a double bar graph showing the favourite sport of boys and girls surveyed. Draw your graph on **ANNEXURE A** (5)

**Total: 75**

**End**

**ANNEXURE A**

4.1.1

BOYS			GIRLS		
<u>SPORT</u>	<u>TALLY</u>	<u>FREQUENCY</u>	<u>SPORT</u>	<u>TALLY</u>	<u>FREQUENCY</u>
SOCCER			SOCCER		
NETBALL			NETBALL		
VOLLEYBALL			VOLLEYBALL		
CRICKET			CRICKET		

4.1.2

