HILLCREST HIGH SCHOOL

Grade 10 Mathematical Literacy Exam
June 2016

Name: _____

MARKS: 75 TIME: 1½ hours

INSTRUCTIONS

1. This question paper consists of 5 questions. Answer ALL the questions.
2. Number the questions correctly according to the number system used in this question paper.
3. Answer Question 2.4 on the answer sheet provided in your answer book.
4. Start EACH question on a NEW page.
5. You may use an approved calculator (non-programmable and non-graphical), unless stated otherwise.
6. Show ALL calculations clearly.
7. Round off ALL final answers to TWO decimal places, unless stated otherwise.
8. Indicate units of measurement, where applicable.
9. Maps and diagrams are NOT necessarily drawn to scale, unless otherwise stated.
10. Write neatly and legibly.

QUESTION 1

Susan wishes to bake some biscuits to sell at her school market day. She decides to make peanut butter biscuits. Below is a recipe for 1 batch of Peanut Butter biscuits.

Peanut Butter Biscuits

Ingredients:

0,25 kg	margarine
2 cups	sugar
2	eggs
$\frac{1}{2}$ tsp	vanilla essence
310 g	flour
180 g	desiccated coconut
2 cups	oats
2 cups	rice crispies
$\frac{1}{2}$ tsp	bicarbonate of soda
$\frac{1}{2}$	a 400 $\mathrm{m}\ell$ bottle of crunchy peanut butter

1.1 How many cups of oats are required in the recipe? (2)

1.2 If *1 cup of sugar = 250 mℓ*, how many millilitres of sugar are required for this recipe? (2)

1.3 How many grams of margarine are used? (2)

1.4 If *1 tsp = 5 mℓ*, how many millilitres vanilla essence are required by this recipe? (2)

1.5 Give in unit form, the ratio of desiccated coconut : flour. (2)

1.6 How many millilitres of peanut butter are required? (2)

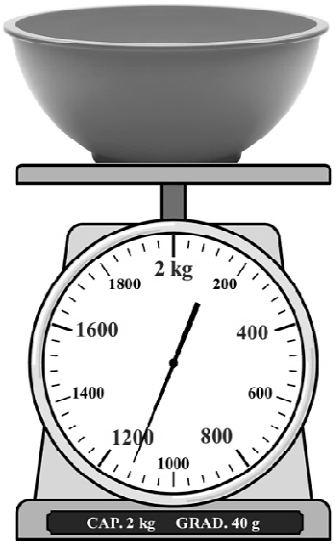
1.7 The label below shows the nutritional information for the brand of peanut butter that Susan uses.

Nutrition Facts	
Serving Size: 2 Tbsp (32 g)	
Servings Per container: about 15	
Amount Per Serving	
Calories 190	
	% Daily Value
Total Fat 17 g	**26%**
Saturated Fat 3,5 g	**18%**
Cholesterol 0 mg	**0%**
Sodium 140 mg	**6%**
Total Carbohydrate 7g	**2%**
Dietary Fiber 2 g	**7%**
Sugars 3g	
Protein 7 g	

1.7.1 Calculate what the maximum recommended amount of sodium is per day. (3)

1.7.2 If the weight of the peanut butter used in the recipe is 213 g calculate the total amount of protein present in the biscuit dough from the peanut butter. (3)

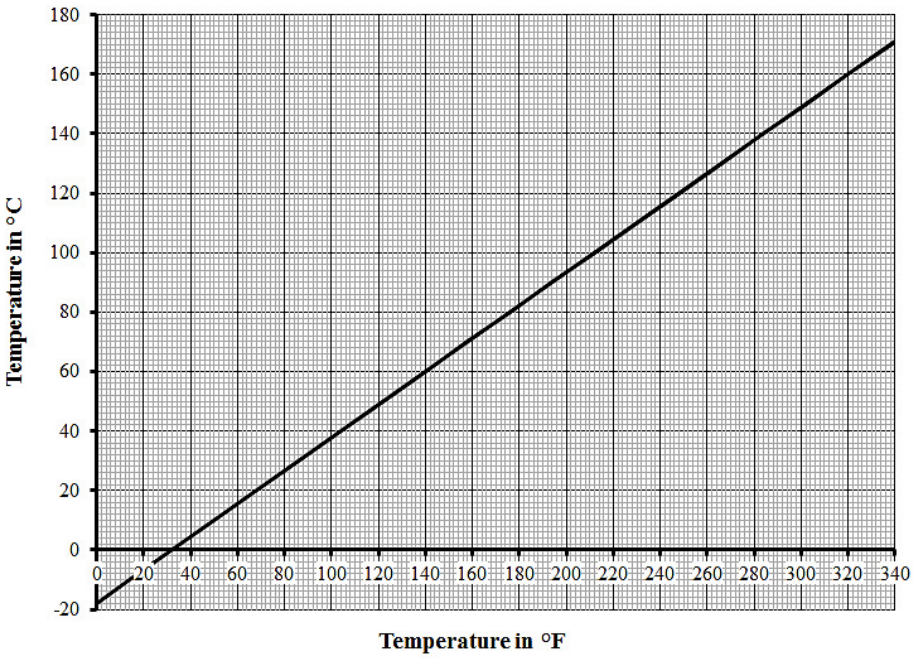
1.8 Susan forgets to zero (set to 0) the scale before she places the flour in the bowl. She knows that the bowl on its own weights 0,81 kg. The scale below shows the mass after Susan has added some flour. Determine if Susan has weighed off enough flour.



(5)

1.9 If one batch makes 8 dozen biscuits, determine how many batches are needed to bake 240 biscuits. (4)

1.10 The recipe suggests that the biscuits get baked at 320° Fahrenheit. Unfortunately, the oven Susan is using is calibrated in degrees Celsius. Susan decides to make the conversion using the following graph:



1.10.1 At what temperature, in degrees Celsius, should the biscuits be baked? (2)

1.10.2 Convert 0° C to Fahrenheit (°F). (2)

1.11 Later Susan finds out that it is also possible to use a formula to make the temperature conversions. Use the formula below to convert 41° F to °C. (2)

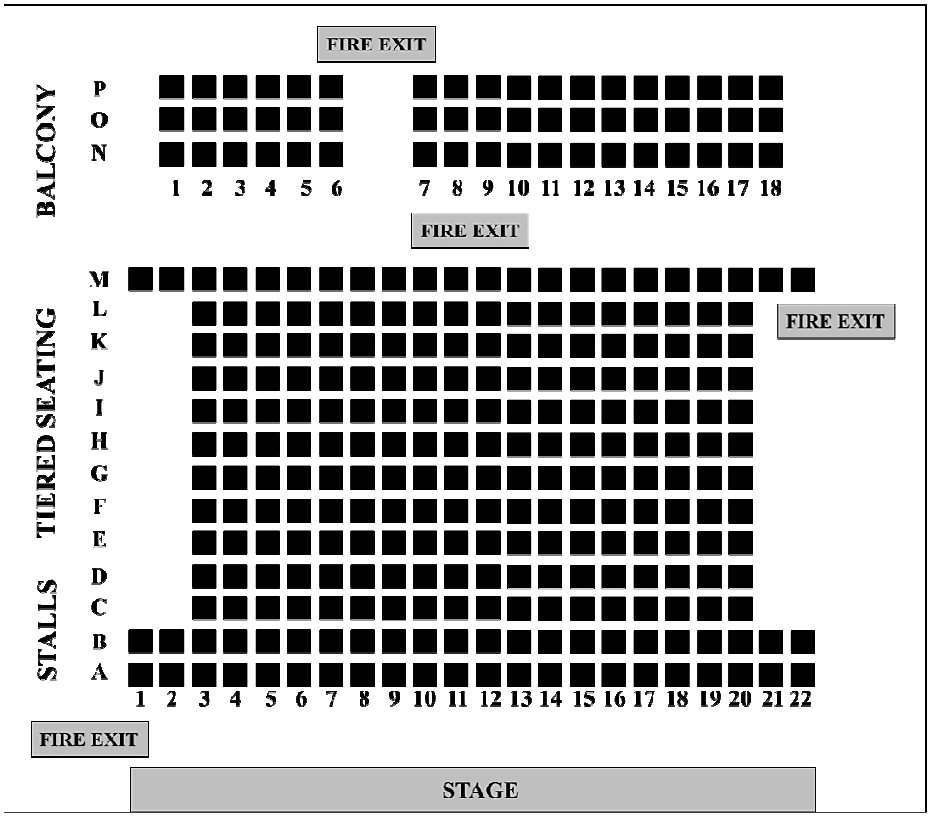
$$^{\circ}C = \frac{5}{9}\left(^{\circ}F - 32^{\circ}\right)$$

1.12 Susan placed a tray of biscuits in the oven at 14:48. She took them out of the oven 12 minutes later. Determine what time, using the 12 hour clock format, she took the biscuits from the oven. (3)

[36 marks]

QUESTION 2

Study the floor plan of a theatre below and answer the questions which follow.



2.1 How many rows of tiered seating are behind seat G7? (2)

2.2 Is seat A1 a good seat to view a play? Give a reason for your answer. (2)

2.3 How many emergency exits are there in the theatre? (2)

2.4 Propose a strategy to evacuate the theatre in case of a fire? Using the map of the theatre provided in the Answer Sheet divide seats in the the theatre into blocks showing with arrows which blocks must use which exit. (4)

[10 marks]

QUESTION 3

Zoey is a first year university student this year. Her parents give her a monthly allowance of R3 000 to cover her expenses which consist of the following:

- Monthly cellphone payments
- A total monthly instalment of R500,00 for two clothing stores, Teencraze and Fabfashion
- Daily cost of R35,00 for food (30 day month)
- R130,00 per weekend for entertainment
- Transport costs of R175,00 per week

TABLE 1 below shows Zoey's budget for April:

TABLE 1: April budget

Monthly cellphone payments	R180
Teencraze account	R260
Fabfashion account	**A**
Food for the month	**B**
Weekend entertainment for four weeks	**C**
Transport for four weeks	**D**
TOTAL	R2 950

3.1 Calculate the missing amounts **A**, **B**, **C** and **D**. (8)

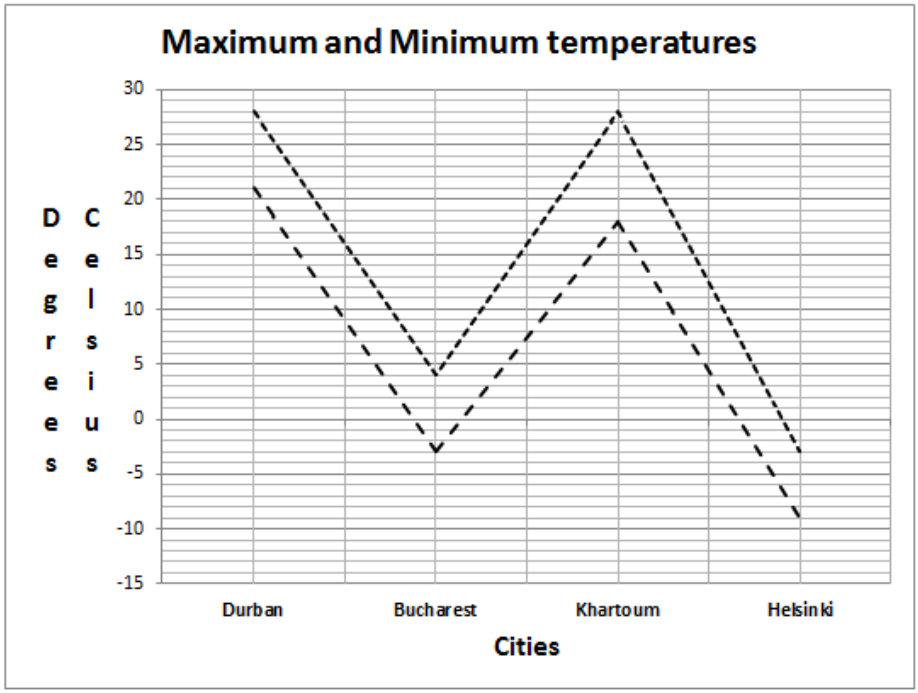
3.2 Calculate the difference between her allowance and her total expenses for the month (2)

3,3 Zoey needs R180 to go on a university excursion. Name ONE possible way in which she can reduce her monthly expenditure so that she will have enough money for the excursion. (2)

[12 marks]

QUESTION 4

The graph below shows the minimum and maximum temperatures for four cities with a similar longitude on a day in February. Study the graph and answer the questions that follow:



4.1 Give the minimum temperature of Helsinki. (2)

4.2 Which city or cities minimum temperature was higher than Bucharest's maximum temperature? (2)

4.3 Give the temperature range for Bucharest. (2)

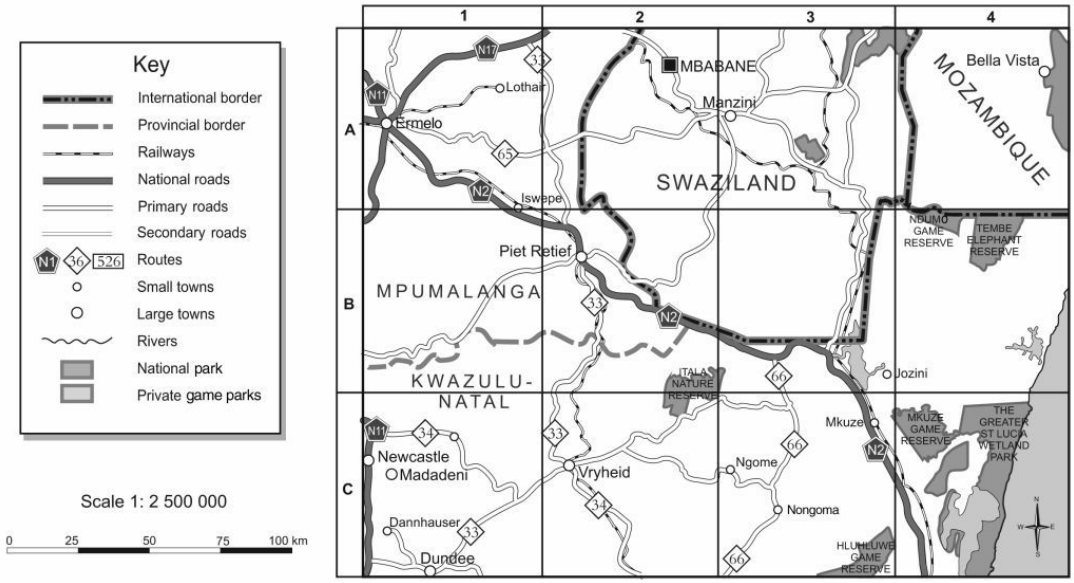
4.4 Convert Durban's maximum temperature to degrees Fahrenheit (°F), using the formula:

Temperature in °F = 1,8 temperature in °C + 32° (2)

[8 marks]

QUESTION 5

Study this map of Northern KwaZulu-Natal and parts of Swaziland and Mozambique.



5.1 In which grid block do you find Nongoma? (1)

5.2 In which general direction are you travelling if you are going:

a) from Manzini to Ermelo (1)

b) from Vryheid to Piet Retief? (1)

5.3 Calculate the distance as the crow flies from Ermelo to Manzini. (3)

5.4 What is the actual area, in km^2, represented by one grid block on this map? (3)

[9 marks]

Grade 10 Maths Literacy Paper June 2016							
NAME :					**CLASS :**		
TEACHER :					**DATE :**		
Q1	**Q2**	**Q3**	**Q4**	**Q5**		**TOTAL**	**%**
36	**10**	**12**	**8**	**9**		**75**	

Question 2.4