



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

GENERAL EDUCATION AND TRAINING CERTIFICATE

NQF LEVEL 1

AET LEVEL 4 SITE-BASED ASSESSMENT

**LEARNING AREA : MATHEMATICS AND
MATHEMATICAL SCIENCES**

CODE : MMSC4

TASK : INVESTIGATION

TIME : 3 HOURS

MARKS : 50

This assessment task consists of 4 pages.

INSTRUCTIONS AND INFORMATION

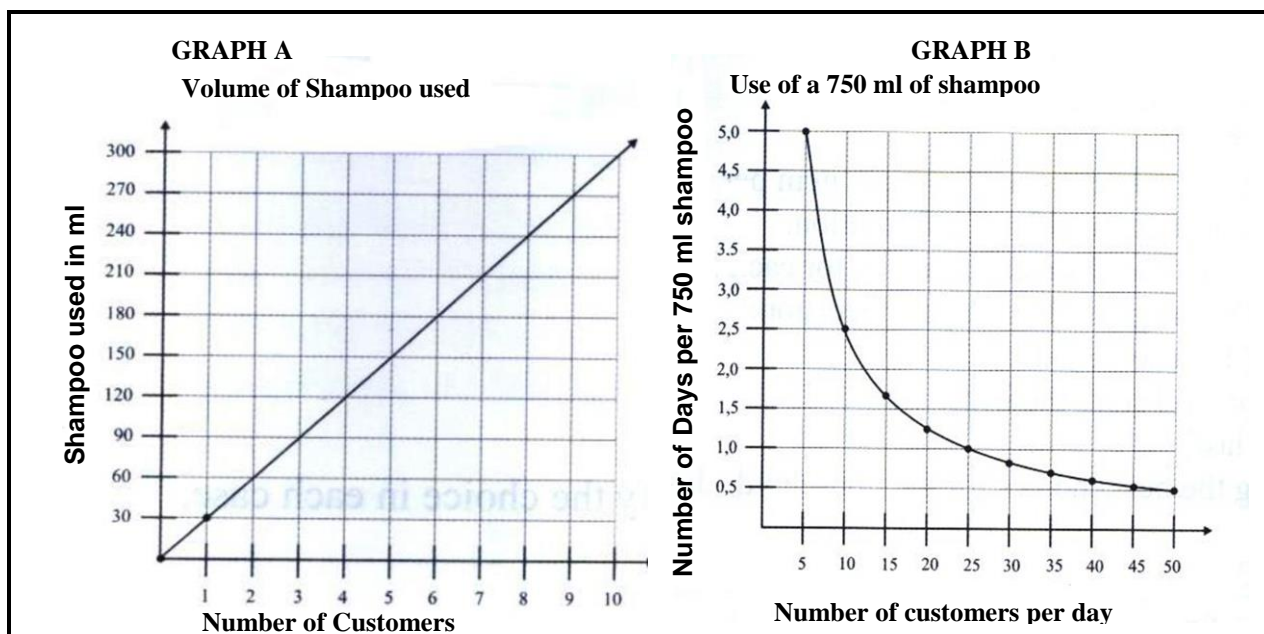
1. This investigation should be done in pairs. Each member should however write his/her own work and submit.
 2. ACTIVITY 1 and 2 will be marked using a memorandum.
 3. For preparation, you need to have the following: a ruler, pencil and a calculator.
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ACTIVITY 1

At Ayanda's hair salon 30 ml of shampoo is used for each customer. One bottle contains 750 ml of shampoo.



Study GRAPHS A and B below.



1.1 Use GRAPH A to answer the following questions:

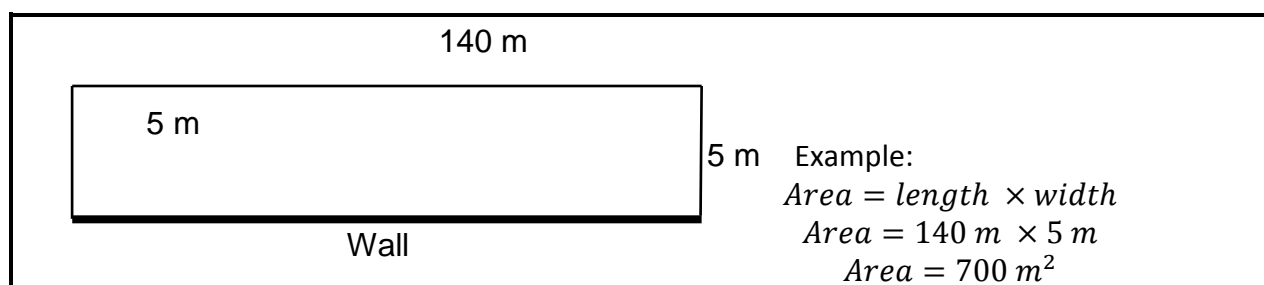
1.1.1 Explain In your own words what information is communicated in GRAPH A.

(2)

- 1.1.2 Write down a rule that you will use to determine the relationship between the shampoo used and the number of customers. (2)
- 1.1.3 State which ONE of the two variables is dependent. Why do you say so? (2)
- 1.1.4 Calculate the values on the vertical axis for any three values on the horizontal axis. Show ALL calculations. (6)
- 1.1.5 Fill in the missing words:
- The more the number of customers the ... the amount of shampoo used. (1)
- 1.1.6 What type of proportion is described in QUESTION 1.1.5? (1)
- 1.2 Use GRAPH B to answer the following questions:
- 1.2.1 Write a formula to determine the relationship between the number of days and the number of customers per day. (2)
- 1.2.2 After how many days will a 750 ml shampoo bottle be finished when 10 customers have been serviced? (1)
- 1.2.3 How many customers in a day will be serviced by two 750 ml shampoo bottles? Show ALL the calculations. (2)
- 1.2.4 What type of proportion is represented in GRAPH B? Motivate your answer by describing the proportion. (2)
- 1.2.5 Use THREE values in the graph and do the calculations to justify the answer in QUESTION 1.2.4 (6)
- 1.3 Compare the two graphs. What is the implication when more customers visit the salon? (3)
- [30]**

ACTIVITY 2

The municipality in your area wants you to design a community vegetable garden for the youth in the community. There is 150 m of fence available to enclose the rectangular ground. The wall will be one side of the garden; so only three sides of the rectangular garden will be fenced off. It is your task to design the largest rectangular garden area that can be enclosed with 150 m of fence.



- 2.1 Copy and complete the table below with possible combinations of widths and lengths for the vegetable garden.

Perimeter (m)	Width (m)	Length (m)	Area (m ²)
150	0	150	0
150	5	140	700
150	10	130	1300
150	(c)	(d)	(e)
150	(e)	(f)	(f)

(8)

- 2.2 Use trial and improvement to determine the maximum area of the garden. (4)

- 2.3 What is your observation regarding the sizes of the length and width of the garden for it to give maximum area? (2)

- 2.4 Determine the area of the garden if the width of 10 m is doubled and the length of 130 m remains the same. (2)

- 2.5 Give FOUR reasons why community gardens are important. (4)

[20]**TOTAL: 50**