

NAME OF SCHOOL

**Maths Literacy
Grade 11**

Paper 1

2,5 hours

100 marks

INSTRUCTIONS AND INFORMATION

Read the following carefully before answering the questions:

1. Number the answers exactly as the questions are numbered.
2. Start the answer to each question at the top of a new page.
3. All graphs should be drawn in pencil and labelled in ink.
4. Write neatly and legibly.
5. Calculators may be used.
6. The diagrams in the question paper may not necessarily be drawn to scale.
7. Round off all answers to **two** decimal places unless instructed otherwise.
8. Use your time wisely!

Question 1:

Mr Kostas Souvlaki, a Greek butcher, has asked for your help. He is great with lamb chops but bad with numbers. He has provided you with the following information.

Product	Cost price (per kg)	Selling price (per kg)
Lamb chops	R28	R35
Fillet steak	R76	?
Spare ribs	R43	R50,74
Mincemeat	?	R60

- 1.1.1 What is the profit on a kilogram of spare ribs? (2)
- 1.1.2 By what percentage are lamb chops marked up? (3)
- 1.1.3 If fillet steak is marked up by 15 %, determine the selling price. (3)
- 1.1.4 If mincemeat is marked up by 20 %, determine the cost price. (3)
- 1.1.5 A customer buys 1 kg of lamb chops, 0,8 kg of mincemeat and 0,5 kg of spare ribs. How much will he pay Mr Souvlaki? (4)
- 1.1.6 How much profit will Mr Souvlaki make on the order in 1.1.5? (6)

Mr Souvlaki has a customer who has moved to South Africa from the USA. He is used to measuring weight in pounds and ounces instead of kilograms and grams. Help Mr Souvlaki to serve his customer. You will need the following conversions:

- 1 kg = 1 000 g
- 2,2 pounds = 1 kg
- 1 pound = 16 ounces

- 1.2.1 How many kilograms in one pound? (2)
- 1.2.2 How many ounces in two kilograms? (3)
- 1.2.3 Using the table above, how much will it cost Mr Souvlaki's customer to buy three pounds of mincemeat? (3)

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Question 2:

Roland Winterbottom, a family friend, has started a small business manufacturing teapots. He has opened up a small factory with two employees and some machinery.

- Each teapot costs R12 to manufacture.
- Fixed costs for running the teapot factory are R6 256 per month.
- He plans to sell each teapot for R80.

2.1.1 Write an expression for the total revenue that will come from producing x teapots. (2)

2.1.2 Write an expression for the total monthly costs for the factory if x teapots are produced. (3)

2.1.3 Complete the table below:

Teapots produced	20	40	60	80	100	120	140
Cost	(a)	(b)	R6 976	R7 216	R7 456	R7 696	R7 936
Revenue	R1 600	R3 200	R4 800	R6 400	R8 000	R9 600	R11 200

(3)

2.1.4 What is the profit per teapot? (ignore fixed costs) (2)

2.1.5 Approximately how many teapots would have to be produced in order to break even? (2)

2.1.6 Use the table above to draw a graph of cost and revenue for the month against the number of teapots produced. Label the break even point. (5)

Roland decides to try exporting his teapots to England. The exchange rate is R14 = £1.

2.2.1 How much will his teapots sell for in England? (2)

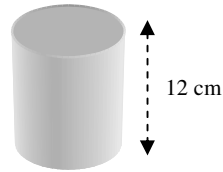
2.2.2 If an English customer spends £40 on teapots, how many would he have purchased? (2)

2.2.3 After deciding to sell the teapots at the price determined in 2.2.1, Roland finds that the exchange rate changes to R13 = £1. Is this good or bad for his business? Give a reason for your answer. (3)

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Question 3:

Crabapple Cola, a new South African softdrink company, has hired you to help design their new tin.

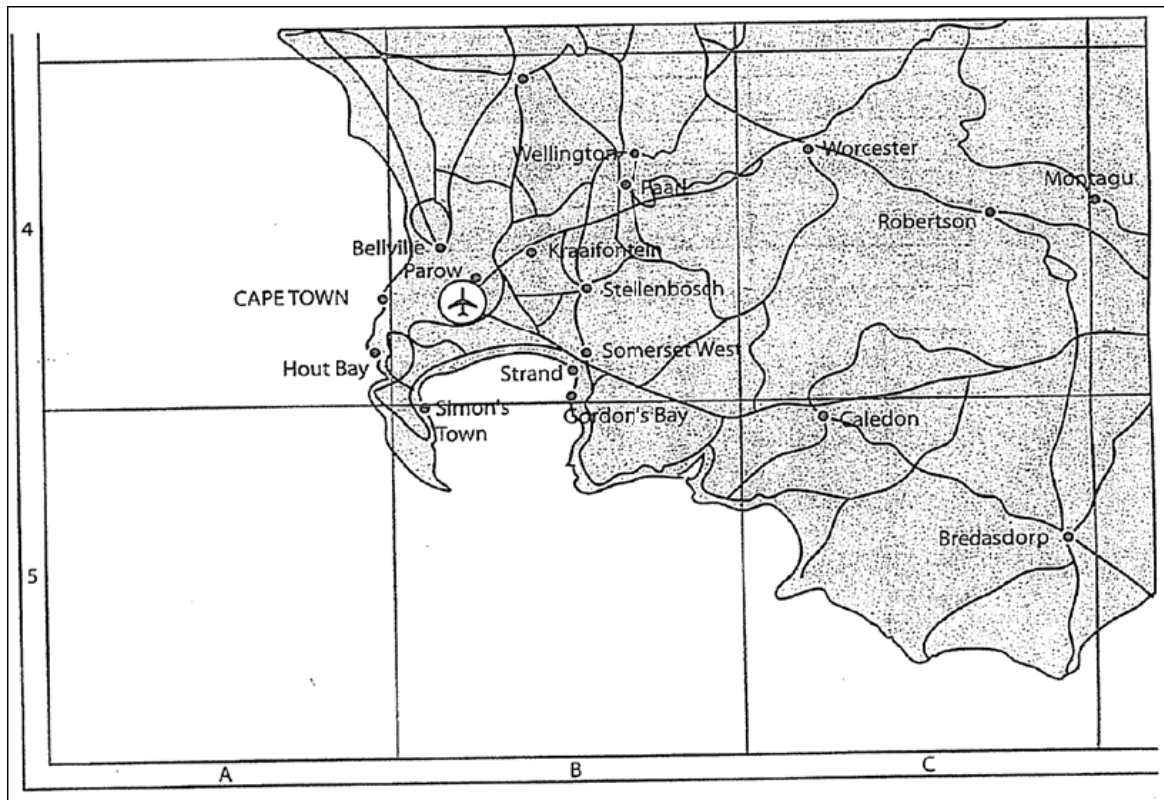


The height is to be 12 cm and the radius is to be a third of the height.

- Volume = $\pi r^2 h$
- Surface area = $2\pi r^2 + 2\pi r h$
- $1 \text{ cm}^3 = 1 \text{ ml}$
- $1\ 000 \text{ ml} = 1 \text{ litre}$

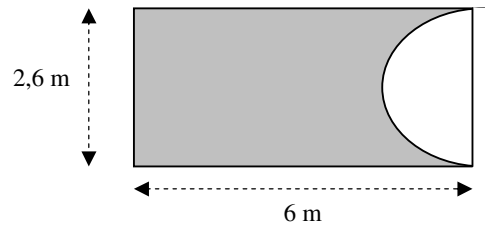
- 3.1.1 Show that the radius of the tin is 4 cm. (1)
- 3.1.2 Determine the volume of the tin in litres. Round off your final answer to 1 decimal place. (3)
- 3.1.3 How much liquid would be in a tin that is filled to a height of 6 cm? (2)
- 3.1.4 Determine the surface area of the tin in cm^2 . (3)
- 3.1.5 Tin costs 1 cent per cm^2 and the cola costs 30 c per 50 ml. What would a tin of cola cost to make? (5)

Crabapple Cola is based in Cape Town, but plans to distribute its products throughout South Africa. You are using the map shown below to draw up a distribution plan.



- 3.2.1 Measure the distance on the map between Cape Town and Stellenbosch. Give your answer in millimetres. (2)
- 3.2.2 If the scale of the map is 1: 1 000 000, determine the actual distance between Cape Town and Stellenbosch. Give your answer in kilometres. (3)
- 3.2.3 If a delivery truck travels at an average of 75 km/h between Cape Town and Stellenbosch, then based on your answer to 3.2.2, how long would it take to make the journey? (Give your answer in hours and minutes.) (3)
- 3.2.4 If the company cannot transport its products much further than Stellenbosch, then how many locations will they be able to supply? (1)
- 3.2.5 Which of the towns shown on the map lies furthest South? (1)

The delivery trucks have to be packed as efficiently as possible. Look at the drawing of the interior of the delivery truck shown below. The shaded area is the area available for storage. The area of a circle is given by the formula $A = \pi r^2$.



3.3 Find the area of the shaded portion.

(5)

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Question 4:

Seven students take a general knowledge quiz. The marks (out of 40) are shown in the table below.

1	12	16	20	26	29	34
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- 4.1 What was the median mark? (2)
- 4.2 What was the mean mark? (2)
- 4.3 Express the third lowest mark as a percentage. (3)
- 4.4 What is the range of the marks? (1)
- 4.5 How would you rate the students' performance in the test? Was it poor, average or excellent? Give a reason for your answer. (3)
- 4.6 Complete the table below (note that 10 to 20 includes 20, and 20 to 30 doesn't include 20):

Mark range	Number of students
0 to 10	1
10 to 20	(a)
20 to 30	(b)
30 to 40	1

- (2)
- 4.7 Draw a bar graph displaying the data in the table. (3)
- 4.8 What percentage of the students were in the 20 to 30 range? (2)

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