

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

JUNE 2019

MATHEMATICAL LITERACY P2

MARKS: 100

TIME: 2 hours



This question paper consists of 7 pages and a 6-page addendum with 5 annexures.

INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of FOUR questions. Answer ALL the questions.
2. Use the ADDENDUM with ANNEXURES for the following questions:

ANNEXURE A for QUESTION 1
ANNEXURE B for QUESTION 2.1
ANNEXURE C for QUESTION 3.1
ANNEXURE D for QUESTION 4.1
ANNEXURE E for QUESTION 4.2
3. Number the questions correctly according to the numbering system used in this question paper.
4. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
5. Show ALL calculations clearly.
6. Maps and diagrams are NOT drawn to scale, unless otherwise stated.
7. Indicate units of measurement, where applicable.
8. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
9. Start EACH question on a NEW page.
10. Write neatly and legibly.

QUESTION 1

- 1.1 ANNEXURE A shows a statement for fees payable for courses offered by a student at a university for Semester 1 and Semester 2.
Explanations in the statement are in both English and Afrikaans.
Use the information in ANNEXURE A to answer the questions below.

- 1.1.1 With the necessary calculations, show how the amount overdue was calculated. (2)
- 1.1.2 Determine the probability of having a course with a study guide in both semesters. Give your final answer as a decimal fraction rounded to two decimal places. (3)
- 1.1.3 Nancy claims that her tuition fees for EBUS 2715 are R1 000 more than her tuition fees for KOM 234. Show, with the necessary calculations, whether her statement is valid or not. (6)
- 1.1.4 Calculate the fee for registration as a percentage of the current amount. (3)
- 1.2 1.2.1 Show, with the necessary calculations, that the difference in the mean amounts for the tuition fees payable in Semester 1 and Semester 2 (excluding study guide fees) is less than R500. (6)
- 1.2.2 University fees for ALL courses have increased by 5% from the previous year. Calculate the amount of tuition fees for ESBM 2724 in 2017. (3)

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QUESTION 2

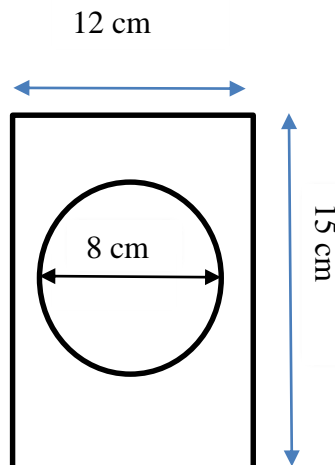
- 2.1 The strip chart in ANNEXURE B shows the route between Cape Town and Springbok.

Answer the questions below on the strip chart in ANNEXURE B.

- 2.1.1 When looking at the map, the distance between Vanrhynsdorp and Garies, and the distance between Kamieskroon and Springbok seems equal. Show, by using calculations, whether it is correct or not. Give a reason for your findings. (5)

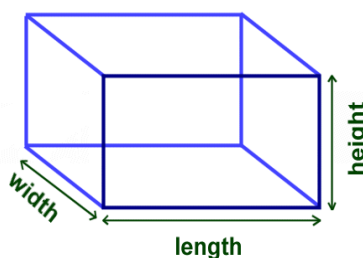
- 2.1.2 A family from Malmesbury will be attending a birthday party in Calvinia. They leave Malmesbury at 7:00 and have breakfast for 45 minutes at a Wimpy (fast food restaurant) on their way. Determine at what time they will arrive in Calvinia, if they travel at an average speed of 95 km per hour.
You may use the following formula:
Distance = Speed \times Time (7)

- 2.2 Invitation cards for the party are in a rectangular shape, with a circular photo of the birthday girl in the middle of the invitation card and dimensions as shown below.



- 2.2.1 Calculate the area of the invitation card without the photo. Give your final answer to the nearest mm^2 .
You may use the following formulae:
Area of invitation card = length \times width
Area of photo = $\pi \times \text{radius} \times \text{radius}$ (7)

- 2.2.2 One of the guests buys a gift that is packaged in a rectangular box as shown below. She must wrap the gift with gift wrapping paper.



Dimensions of the box are:

Length = 390 cm

Width = 270 cm

Height = 300 cm

Calculate the total area of the paper that is needed for wrapping the box in cm^2 .

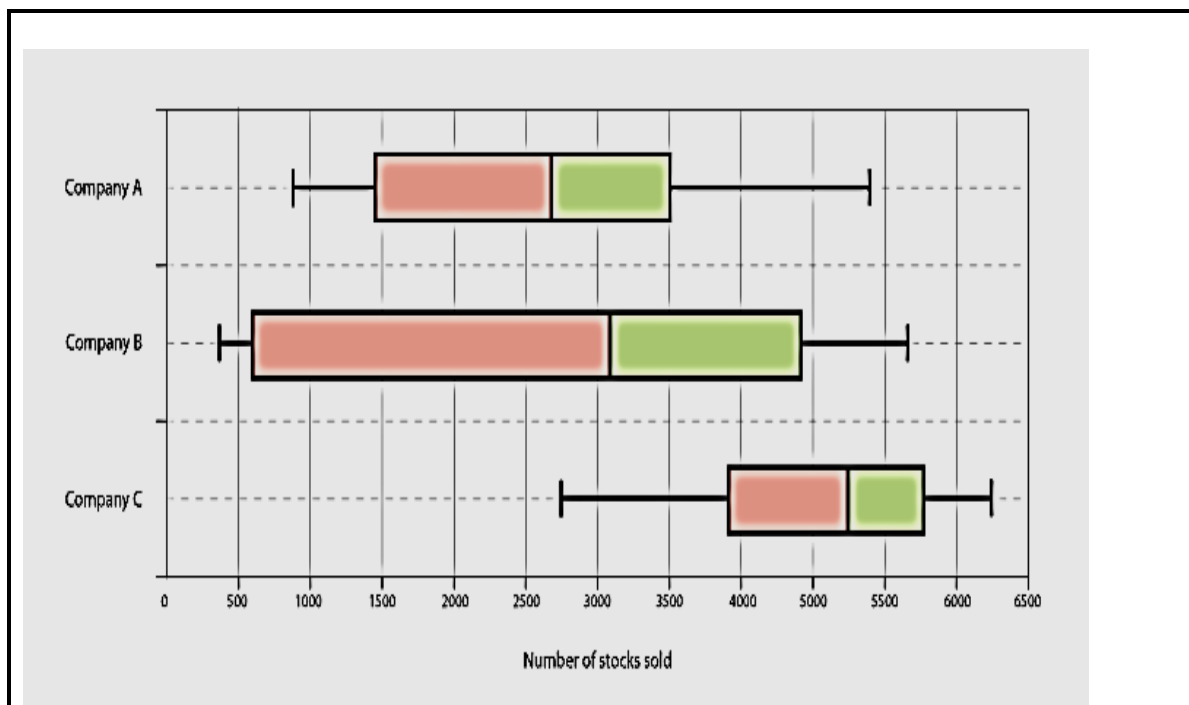
You may use the formula:

Surface area of the gift box

$$= 2(\text{length} \times \text{width} + \text{width} \times \text{height} + \text{length} \times \text{height})$$

(4)

- 2.3 Three companies have their sales plotted as box and whisker charts as shown below.



Use the box and whisker charts to answer the following question.

With the use of calculations, compare and comment on the interquartile ranges and ranges on the number of stocks sold by Company A and Company C respectively.

(6)
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QUESTION 3

- 3.1 The table in ANNEXURE C represents matches played by the 16 soccer teams in the Premier Soccer League with their scores as on 5 December 2018.

NOTE: For every win, a team gets 3 points.

For every draw, a team gets 1 point.

For a loss, a team gets 0 points.

- 3.1.1 Calculate the missing values **A** and **B** respectively on the table. (4)

- 3.1.2 Calculate the probability of choosing a team, which has won more than six games from the teams that have played twelve or more games. (2)

- 3.1.3 A player for Mamelodi Sundowns claims that out of the remaining matches that they have to play, to get to the same number of matches as already played by Orlando Pirates, and to have five points more than Orlando Pirates, they must win two and draw one. Show, with the necessary calculations, whether his statement is valid or not. (4)

- 3.2 3.2.1 The Curriculum and Policy Statement (CAPS) document stipulates that Mathematical Literacy needs to be taught for 4,5 hours during a 5-day cycle. There are two schools: School A has 45 minute periods with 3 double periods and 2 single periods for Mathematical Literacy, while School B has 30 minute periods with 4 double periods and 1 single period per week.
- Show, with the necessary calculations, which school complies with the CAPS document. (5)

- 3.2.2 In one of the schools, a Mathematical Literacy teacher is giving textbooks to her Grade 10, Grade 11 and Grade 12 classes in the ratio 4 : 3 : 2.
- If she hands out 62 books to the Grade 12 class, determine how many books she handed out altogether. (3)

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QUESTION 4

- 4.1 ANNEXURE D represents a seating plan for an American Airbus plane.
Answer the questions below that are based on ANNEXURE D.

- 4.1.1 Give a possible reason for a bigger space between row 8 and row 9. (2)
- 4.1.2 Determine the number of seats in the economy class. (3)
- 4.1.3 Mention ONE advantage of being a passenger in the first-class seats of the plane. (2)

- 4.2 ANNEXURE E shows the program and costs for Wimbledon tickets for 2007 and 2019 tournaments.

NOTE: Wimbledon is a tennis championship tournament, which is played annually at Wimbledon in England.

Answer the following questions based on ANNEXURE E.

- 4.2.1 A couple from America is planning to attend the 2019 Wimbledon tennis championship tournament. They are planning to watch the quarterfinals as well as the finals for both men and women. The couple claim that 30 000 American dollars will be enough to watch all their planned matches. Show, with the necessary calculations, whether their claim is valid or not. (8)
- 4.2.2 The couple researched the ticket prices for 2007, as they were interested in the effect of inflation. Show, with the necessary calculations, that the percentage increase for ticket prices for the men's finals from 2007 to 2019 is more than 40%. (4)
- 4.2.3 The couple started saving three years ago for the 2019 tournament. They invested 20 000 American dollars at an institution offering 6,5% interest compounded annually. Calculate the total in American dollars after 33 months. (5)
- 4.2.4 Give a possible reason why the price of tickets for the men's matches are more expensive than the price of tickets for the women's matches. (2)
- 4.2.5 Describe the trend observed for the ticket costs of men's matches during the tournament and give a possible reason for the trend. (4)

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TOTAL: 100

