Grade 11 Maths Literacy November Exam – Paper 1

Total Marks: 150

Time allocated: 3 hours

_____

Instructions:

- This paper consists of FIVE questions.

- Answer ALL questions.

- Start each question on a new page.

- Show ALL calculations.

- An approved non-programmable, non-graphical scientific calculator may be used.

- When applicable, round answers to TWO decimal places, unless otherwise specified.

- Diagrams are NOT necessarily drawn to scale.

- Number all answers correctly according to the numbering used in this question paper.

- Write your name on any annexures provided and hand them in with your paper.

- Write neatly in a blue pen.

QUESTION 1

Mr Kapic is a butcher. He needs help with calculating various amounts. Use the table below to help answer the following questions:

Product	Cost price (per kg)	Selling price (per kg)
Lamb chops	R28	R35
Fillet	R76	**A**
Spare ribs	R43	R50,74
Mince meat	R50	R60

1.1.1. Calculate the profit on one kilogram of spare ribs. (2)

1.1.2. Calculate the percentage mark-up on the lamb chops. (3)

1.1.3. The fillet steak is marked up by 15%. Calculate the selling price per kg for fillet steak (**A**). (3)

1.1.4. A customer buys 2kg of lamb chops; 0,5kg of mince meat; 1,8kg of spare ribs and 1,6kg of fillet. How much does he pay Mr Kapic? (5)

1.1.5. How much profit will Mr Kapic make on the order in QUESTION 1.1.4? (6)

1.1.6. The selling prices above all include VAT. Calculate the amount of VAT that would be charged on 1,8kg of lamb chops. (3)

One of Mr Kapic's customers comes from the UK, so he does not usually use kilograms when measuring mass. Use the conversion table below to help answer the question.

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

1.2.1. The customer asks Mr Kapic for 3,5 pounds of lamb chops. Convert this into kilograms for Mr Kapic. (2)

1.2.2. Mr Kapic tells the customer he is having a special. There is a discount if a customer orders 2,2kg of any type of meat. Convert this amount to ounces. (3)

1.2.3. The customer decides to buy the extra lamb chops to get the discount. He buys 5,5 pounds of lamb chops. Calculate the price for the lamb chops before the discount. (2)

1.2.4. The special discount is 10% off the price. Calculate the customer's discount on the lamb chops. (2)

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QUESTION 2

Mrs Killarney makes and sells ceramic cups. She has a small factory with some machinery and two employees.

- Each ceramic cup costs R3,50 to manufacture.

- Fixed costs for running the factory are R6 280 per month.

- She sells each ceramic cup for R12.

2.1.1. Suggest two possible fixed costs Mrs Killarney will pay each month. (2)

2.1.2. Write an equation to express the cost of manufacturing any number of ceramic cups, where the number of cups is represented by x. (3)

2.1.3. Write an equation to express Mrs Killarney's total income from selling any number of cups, where the number of cups is represented by x. (2)

2.1.4. The table below shows the income and expenses for different numbers of ceramic cups. Complete the table by calculating the missing values **A** and **B**.

No. Cups	100	200	300	400	500	600	700	800
Income (R)	1 200	2 400	3 600	**A**	6 000	7 200	8 400	9 600
Expense (R)	6 630	6 980	7 330	7 680	8 030	**B**	8 730	9 080

(3)

2.1.5. Draw a double line graph to show income and expenses for the cups on ANNEXURE A. (7)

2.1.6. Give the approximate break-even point for these cups. (2)

Mrs Killarney wants to export her ceramic cups to England. The exchange rate at the time was R17,55 = 1 BPS (British Pound Sterling). She will sell her cups in sets of 6.

2.2.1. Calculate the price in rand for the set of 6 cups. (2)

2.2.2. What is this price in pounds? (2)

2.2.3. A customer spends 28,70 BPS excluding shipping on cups. How many sets did this customer purchase? (2)

2.2.4. Shipping items to England costs R62,50 standard charge plus R14,50 per kg. Each cup weighs 230 g.

   a.   A shop in England purchased 12 sets of cups. Calculate the mass in KILOGRAMS of the package to be shipped. Round your answer up to the nearest kilogram. (4)
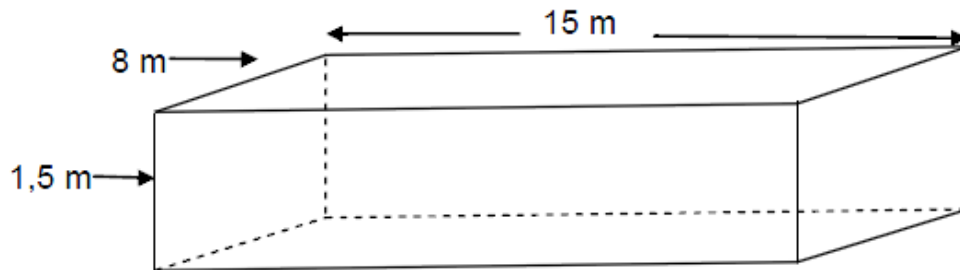
   b.   Calculate the shipping cost, in rand, for this package. (2)

   c.   Calculate the TOTAL amount the store will pay in RAND for this order. (2)

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QUESTION 3

The Harris family is having a pool built in their back garden. The pool will be 15 metres long, 8 metres wide and 1,5 metres deep. A diagram of the pool is given below.

3.1.   The pool walls need to be tiled.

3.1.1.   Calculate the surface area if the walls of the pool, in square metres.

Use the following formula:

Surface Area = 2 x length x depth + 2 x width x depth

(3)

3.1.2.   Each square tile measures 20 cm x 20 cm. Calculate how many tiles are needed to tile the walls.   (4)

3.2.   Calculate how much water will be needed to fill the pool. Give your answer in **kilolitres** if **1m^3 = 1kl**.

Use the following formula:

**Volume = length x width x depth**

(3)

3.3.   Water costs R5,68 per kilolitre. Calculate the cost to fill the pool, if the pool is filled to 94%

capacity to allow for splashing.   (3)

3.4.   In one afternoon, 1,5% of the water in the pool can evaporate. How much water is this?   (2)

3.5.   The Harris family will put paving stones around their pool to prevent grass from getting into the

pool. The diagram below shows the final measures required.
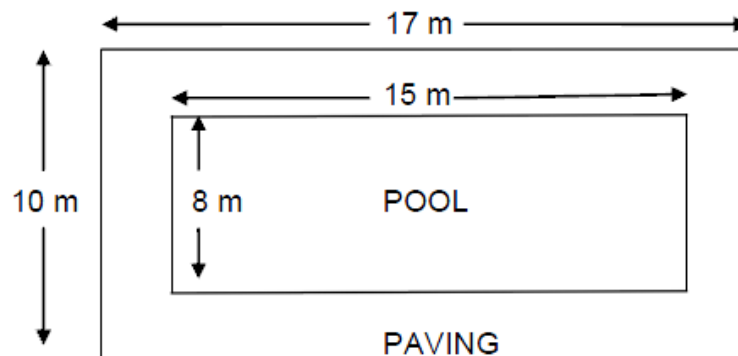
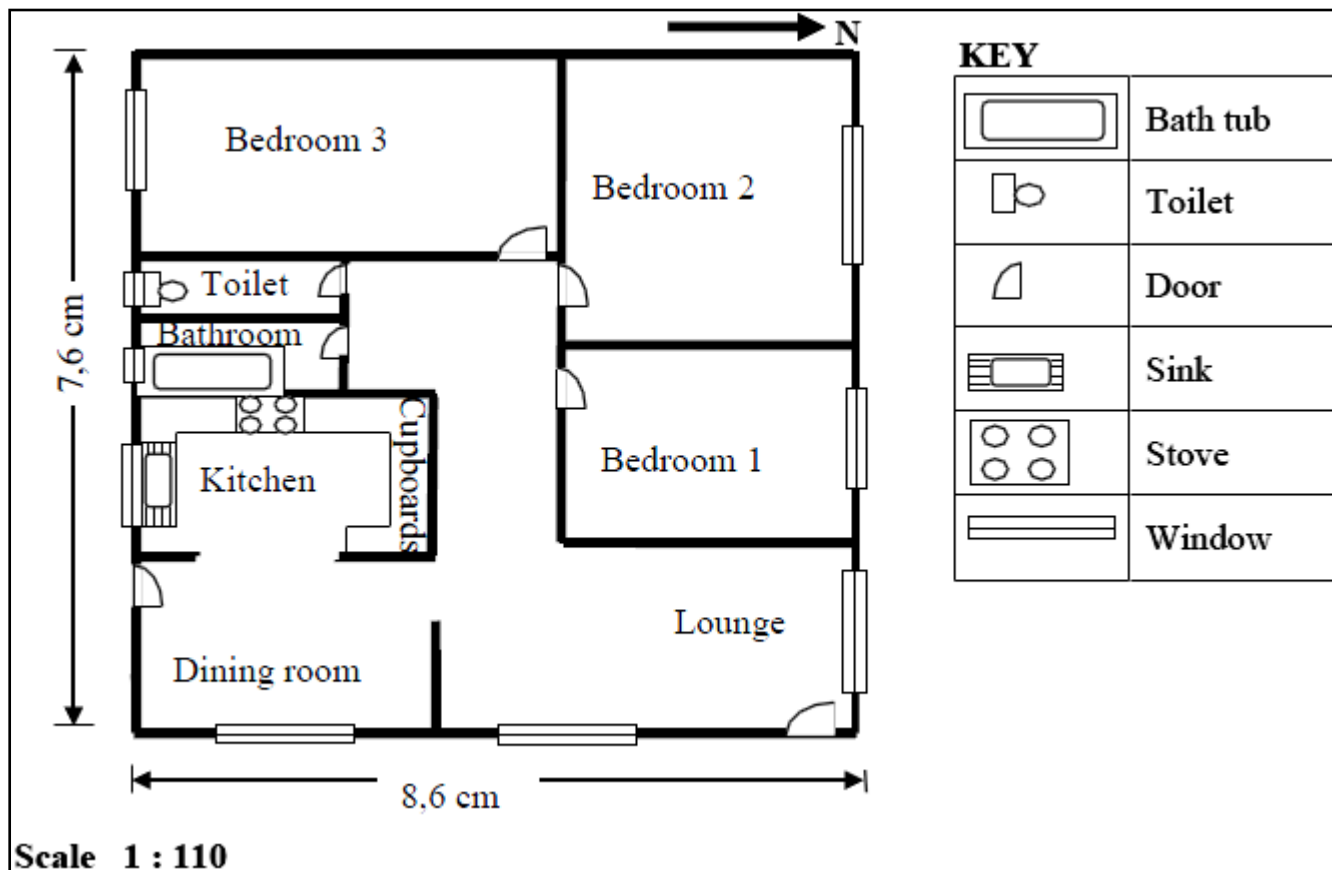3.5.1.   What is the width of paving required?   (2)

3.5.2. Calculate the area to be paved, in square metres. (4)

3.5.3. Paving stones cost R14,50 per m^2. Calculate the cost of the paving around the pool. (2)

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QUESTION 4

Below is a floor plan of Susan's house. This is NOT given to scale. A key is included for the symbols on the plan.

4.1.1. How many windows does Susan have in her house? (2)

4.1.2. Write down the name/s of rooms that have windows facing east. (2)

4.1.3. Draw a sketch of the north elevation plan of this building. This does not need to be to scale. (2)

4.1.4. Use the given scale to determine the actual length of the longer wall in the diagram. Give your answer in metres. (3)

Susan uses the map of South Africa below to plan a trip between different national parks.

[Source: SA Venues.com]

4.2.1. Give the grid reference of the Vaalbos National Park. (2)

4.2.2. Which national parks are situated in the Western Cape? (2)

4.2.3. In which general direction is Durban from Bloemfontein? (2)

4.2.4. It took Susan 30 minutes to fly 135 km between Kimberley and Bloemfontein. Calculate the average speed of the flight, in kilometres per hour. Use the following formula:

$$Average\ speed = \frac{distance}{time}$$

(3)

4.2.5. Which two national parks are equal distances from Bloemfontein? (2)

4.2.6. How many airports are shown on the map within the borders of South Africa? (2)

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QUESTION 5

South Africa played against New Zealand in a T20 series in Cape Town. Below is a bar graph showing the number of runs made per over for both teams. Study the graph and answer the questions that follow.
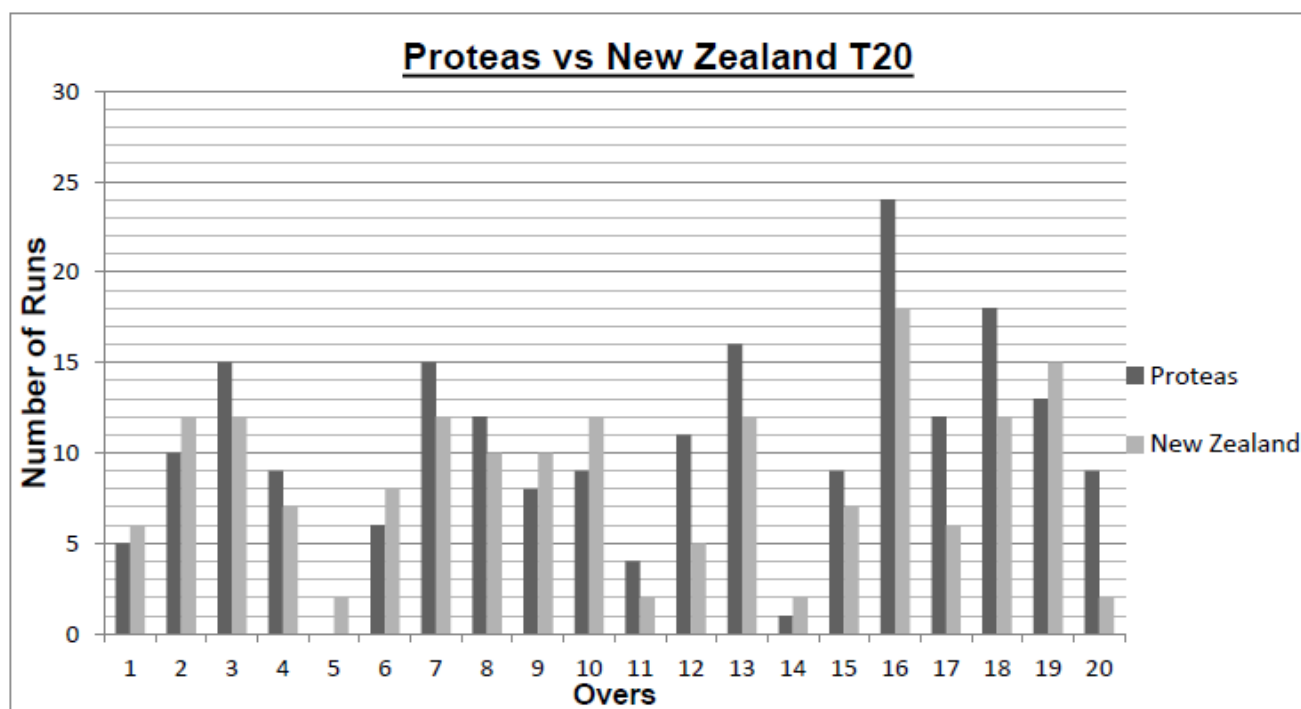
5.1.1. In which over did the Proteas score the most runs? (1)

5.1.2. In which over did the Proteas score no runs at all? (1)

5.1.3. In how many overs did the Proteas score 5 runs or less? (2)

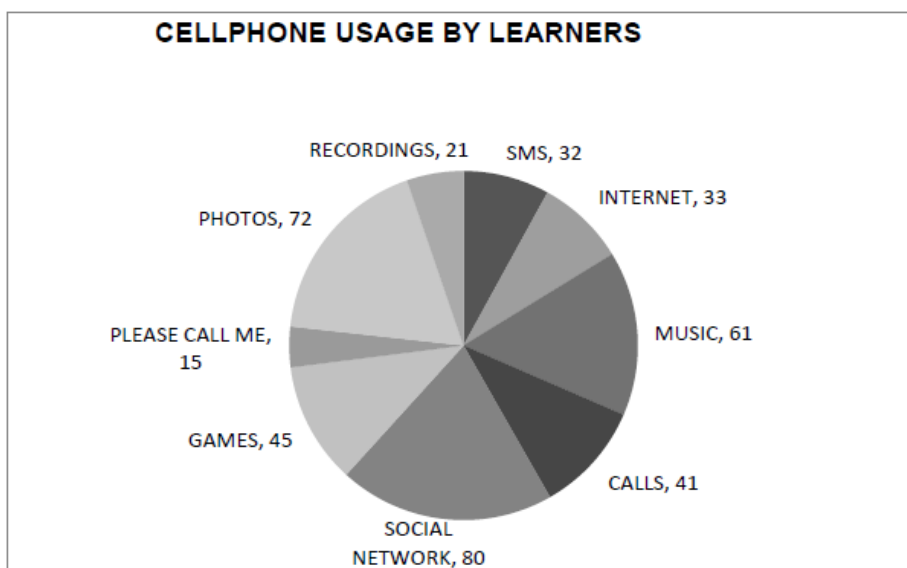5.1.4. In how many overs did the New Zealanders score 12 runs? (2)

5.1.5. During this match, what was the probability that a batsman from either team would score

12 runs in an over? (2)

5.1.6. How many runs did South Africa hit in this match? (2)

5.1.7. Calculate the average number of runs per over for South Africa. (2)

5.1.8. Which team won this match? Show all your calculations to support your answer. (2)

5.2.1 A survey was done amongst 400 learners at 5 schools to find out what teenagers in South Africa use cellphones for the most. On the next page is a pie chart showing the results of the survey.

CELLPHONE USAGE BY LEARNERS

RECORDINGS, 21   SMS, 32
INTERNET, 33
PHOTOS, 72
MUSIC, 61
PLEASE CALL ME, 15
GAMES, 45
CALLS, 41
SOCIAL NETWORK, 80

5.1.9. In this study, identify:

    a. The population   (2)

    b. The sample   (2)

5.1.10. What percentage of learners uses their cellphones for taking photos? Use the following formula:

$$Percentage\ usage = \frac{number\ of\ learners\ taking\ photos}{total\ number\ of\ learners\ surveyed} \times 100$$

    (3)

5.1.11. Calculate the number of degrees that were used to draw the sector for Social Networking.   (3)

5.1.12. What do 8% of learners use their cellphones for?   (3)

5.1.13. If any one of these learners was asked, what is the probability that the learner uses their cellphone for games? Give your answer as a fraction and a percentage.   (3)

5.1.14. What is the probability, as a simplified fraction, of choosing a learner at random and finding that they use their phone for either internet or music?   (3)

5.2. The following table shows the results of a grade 11 Maths Lit test, as marks out of 40.

21	22	23	24	24	24	25	32	34	34	35	35	36	36	37	38	40

5.2.1. Calculate the range in scores.   (2)

5.2.2. Find the median score.   (2)

5.2.3. What is the modal test mark out of 40?   (2)

5.2.4. How many learners got 60% or more for this test?   (2)

    [41]

    GRAND TOTAL: [150]

Annexure A

Name: _____

Income and expenses for cups

Amount (R)

11000

10000

9000

8000

7000

6000

5000

4000

3000

2000

1000

0

100   200   300   400   500   600   700   800

Number of cups