# APPENDIX 5

**Table 5. 2: Expected Mathematical Literacy competencies**

| Competencies | Core descriptors of the competency |
|---|---|
| Comparing numbers | Conversions of numbers from one form to another |
| Critical thinking skills | Asks questions about the content & contexts; checks the appropriateness of the solutions; examines evidence. |
| Data representation methods | Familiarisation of with data representation methods (tables & graphs); analysing & interpreting data presented in various data representation methods |
| Procedural competencies | Routine calculations; relationships between quantities; substitution and manipulation of formulae |
| Reading from graphs, tables & texts | Making meaning of numbers in charts, tables & texts; comparing data in graphs, tables and texts |
| Writing skills | Communicating information effectively; clarifying thinking; explaining understandings of concepts and ideas; applying acquired knowledge to new unfamiliar situations |

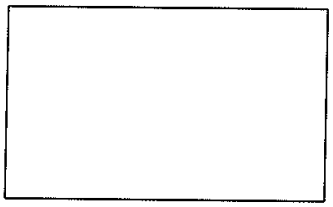
TASK 4

Name: ..... Set: ..... Group: ..... Date: .....

Below are two diagrams to represent the school's swimming pool.

4.1. Add the necessary measurements on the diagrams that you need to calculate the volume of the pool.

**Top view**



**Side view**

4.2. Calculate the volume of the swimming pool in $m^3$. (show all your working out)

4.3. Based on your estimate calculations of the mean amount of solid waste produced by one household, Write an equation to show the amount of solid waste produced (w) in terms of nr of weeks (t) and complete the table for each so you can draw the straight line graph of each of these equations.

4.3.1. In the case that no solid waste is recycled. Equation: ..... = .....

| t (nr of weeks) | 0 | 5 | 10 | 15 |
|---|---|---|---|---|
| w (solid waste produced in $m^3$) | | | | |

4.3.2. In the case that the same materials we have separated in Task 1 are being recycled by all the households. Equation: ..... = .....

| t (nr of weeks) | 0 | 5 | 10 | 15 |
|---|---|---|---|---|
| w (solid waste produced in $m^3$) | | | | |

4.4. Graph both functions on the same grid (make sure to indicate how to differentiate between the two) and attach it to this page. Read off from your graph approximately how long it would take to fill up the whole pool. (Show your method on your graph)

4.4.1. In the case that no solid waste is recycled.

4.4.2. In the case that the same materials we have separated in Task are being recycled by all the households.

4.5. Compare the two readings and comment on them.

TASK 5

Name: ..... Set: ..... Date: .....

Find for as many possible solid waste materials the nearest recycling point to your home and complete the table below as much as possible. (Give a location – an address for each)

**Closest recycling point to ..... (your neighbourhood) per category.**

| Material | Location (address) |
|---|---|
| **Glass** | |
| **Paper** | |
| **Cardboard** | |
| **Cans/tins** | |
| **Plastic** | |



TASK 6

6.1. Write down 3 - reasons why recycling is important / positive effects from recycling:

- .....
- .....
- .....

6.2. Write down 3 possible difficulties people have to overcome to start with recycling:

- .....
- .....
- .....

TASK 7

Design a poster A3 format (soft paper), which can be posted at your local grocery store to **encourage** people to recycle, and to **inform** them of the location of the nearest recycling points.

# APPENDIX 7: Samples of Tests & Examination Papers

MARCH MINI-EXAM 2006
GRADE 10 MATHEMATICAL LITERACY

LO 1 and LO 3
Assessment Standards: 10.1.1., 10.1.2., 10.3.1., 10.3.2.

1 Hour
60 Marks

**Instructions**

- **Draw a ruler line 2,5 cm from the right edge of your page for the marker.**
- **Show all your steps of working out unless otherwise stated in the question.**
- **Use your scientific calculator unless otherwise stated.**
- **Label your answers clearly and correctly.**
- **Leave an open line between questions.**

Question 1

1.1. Use BODMAS to simplify the following expression step by step *(without the use of your calculator)* until you have obtained the value of the expression: (3)

$$[(3+7)\times 5+14]\div 8$$

1.2. Round-off the following numbers according to the instruction given by each of them: (2)
1.2.1. Ayanda earns a gross salary of R3548 per month. *(nearest 100)*
1.2.2. The piece of wood measured 0,2183 metre *(nearest $100^{th}$)*

1.3. Write the following numbers in scientific notation (4)
1.3.1. 0,000 000 000 000 026
1.3.2. 12 450 000
1.3.3. Health problems cost South Africa R 4 billion per year.

1.4. Convert the following fractions to (a) decimal figures *(round off to 3 decimals)* and (b) to percentages *(round off to 1 decimal)* (4)

1.4.1. $\frac{2}{111}$ 1.4.2. $\frac{20}{3}$

1.5. Use your calculator to do the following calculations - *only write the answers.* (3)
1.5.1. $(433 - 20) \times (400 + 28)$
1.5.2. $1{,}2 \times 10^{-5} \times 2{,}457 \times 10^{3}$ *(write your answer as an ordinary number)*
1.5.3. $125 \times \frac{256+24}{8}$

1.6. **Show** how you can make use of the distributive and associative properties to make mental arithmetic of these expressions easier – *no need to do the calculations* (5)
1.6.1. 485 + 46 + 15 – 16
1.6.2. 25 × 23 × 4
1.6.3. 48 × 7

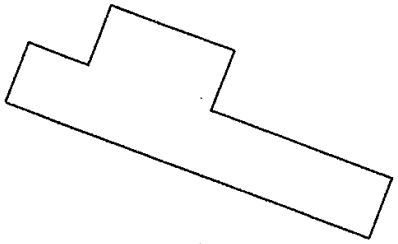
1.7. Write the following ratios in their simplest format (3)
1.7.1. 312 : 468
1.7.2. 8 mm : 1 km

[24]

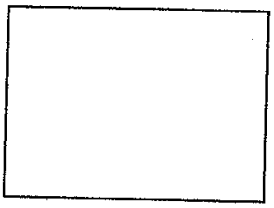
Question 4

Measure the sides to the nearest cm and determine the Area and the Perimeter of the following shapes. [4]

4.1.



4.2.

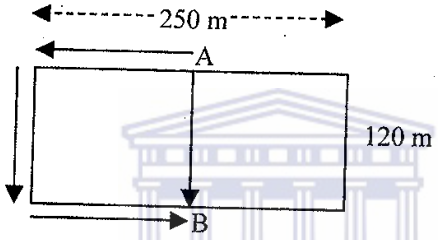


Question 5

Over relative short distances John is able to run 12km/h and swim at 5km/h.

5.1. His running speed converts to 200m/min. Convert his swimming speed to metres per minute (3)

5.2. What would be faster: swimming across this dam or running around it? (to get from point A to B; Point A is halfway of the length of the dam). (4)
*Show all calculations on which your answer is based.*




[7]

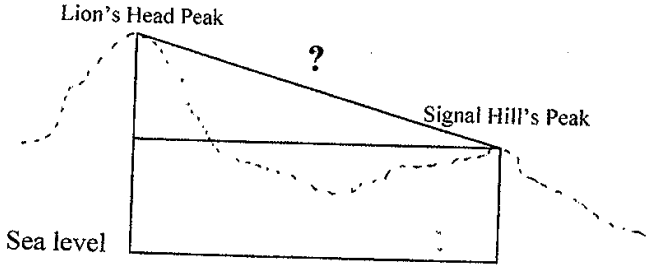
Question 6 – Refer to the map of Cape Town on the last page.

6.1.1. Accurately measure (to the nearest mm) the scale of the map of Cape, and write it as a ratio. (*remember to mention the units)* (2)

6.1.2. Simplify this ratio to the format 1 : …….. (2)

6.1.3. Accurately measure the horizontal distance between the peaks of Lion's Head and Signal Hill on the map, to the nearest mm; and use your answer in 6.1.2. to calculate the real horizontal distance in metres. (2)

6.1.4. Copy and complete the side view diagram of the two peaks; add all the necessary measurements (*some to be found on the map + some from calculations)*, and use the Pythagoras Theorem to find the direct distance of the two peaks in metres. *(round off to the nearest metre)* (6)




[12]

TOTAL [60]

JUNE EXAM 2006
GRADE 10 MATHEMATICAL LITERACY

LO 1, LO 3 and LO4 — 2 Hours, 100 Marks

**Instructions**

- **Draw a 2,5 cm margin on the right-hand side of the page.**
- **Show all calculations used in determining your answers.**
- **Use your scientific calculator unless otherwise stated.**
- **Label your answers clearly and correctly.**
- **Leave a space between questions.**

**Question 1**

*Carefully read the newspaper article and answer the following questions:*

***Hillary inspires duo to beat their own Everest in form of Great Wall of China*** *by ANDY SHLENSKY Cape Times Thu 4 May, 2006*

*A DOCUMENTARY on Sir Edmund Hillary, first man to summit the world's highest peak, inspired Capetonian David Grier to meet the challenge that everyone should conquer their own Everest.*

*Grier and friend Braam Malherbe have found theirs in the form of the Great Wall of China. They hope to become the first people to run along the wall from end to end.*

*The two will attempt to run 45km each day for five months beginning in August to complete the 6700km trek from Jiayuguan, in the Gobi desert, to Shanhaiguan where the wall meets the Yellow Sea.*

*"When I finish, that's going to be my Everest" said Grier.*

*The run, entitled the "Great Wall Challenge for our Children", will benefit Operation Smile South Africa, a branch of the global non-profit volunteer medical service organization that provides reconstructive facial surgery to children with facial deformities.*

*"With Smile, the money will really make a difference," Grier said. "It changes their lives completely."*

*Operation Smile executive director Natalie Miller is overjoyed to have their support.*

*"What they are doing is amazing" said Miller.*

*The duo aim to raise at least $120 000 for the cause. The two face sandstorms, heat, hills and cold. At times they will carry all their gear.*

*"We wanted to find some challenge that has never been done before," Malherbe said. "And nothing could top this."*

1.1. What do you think Sir Edmund Hillary meant by his statement that "Everyone should conquer their own Everest"? (2)

1.2. Who are the two Capetonians inspired by the documentary on Edmund Hillary? (2)

1.3. Who will benefit from their endeavor? (2)

1.4. They are aiming at raising at least $120 000 for the cause, if 1$ = R6,0340 how much money are they aiming to raise in Rands? (1)

1.5. a) How long is the Great Wall of China? b) Convert your answer to metres and write in scientific notation. (4)

1.6. If they will be running 45km per day on average, how many days will they be running? (2)

1.7. If they run on average 8 minutes for every kilometer, how many hours will they be running per day? (3)

[16]

**Question 2**

*The municipal bill a house owner got at the end of April read the following amounts payable to the City of Cape Town:*

- *property rates: R186,33*
- *Water: R21,88 **
- *Refuse: R53,56 **
- *Sewerage: 37,25 **
- *+ 14% VAT on the amounts marked with * above*

2.1. Calculate the total owed to the city for this month. (4)

2.2. *"How your rates will rise in July. (Tygertalk 27/4/2006)*
*The City of Cape Town is set to increase all tariffs at the beginning of July below projected inflation figures.*
*Tariffs for electricity, sanitation and solid waste are all expected to increase by about 5%, while water tariffs are expected to increase by 7%."*

2.2.1 Calculate this person's new Monthly Rates Account for July, based on his April statement and the projected increases published in the newspaper. (property rates stay the same) (5)

2.2.2. Calculate the %-increase of property rates if the amount is increased from R186,33 to R199,37. (3)
[12]

**Question 3**

3.1. *Our school's swimming pool (top view) measures 21,1m by 25m.*

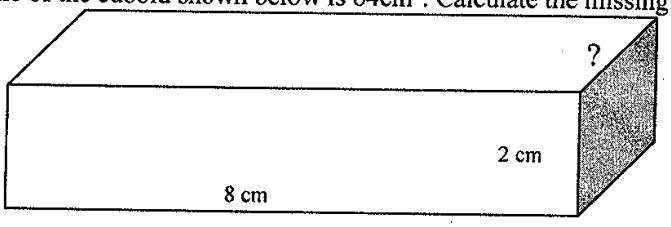
3.1.1. Draw an accurate diagram on a scale 1 : 500 *(+ show your working out)* (4)

3.1.2. Calculate the length of the diagonal of the pool to 2 decimal places. (4)

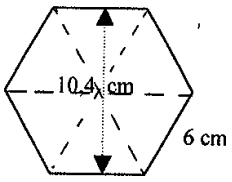


3.2. A square carpet covers an area of 1,44m$^2$. Calculate the length of its sides? (2)

3.3. The volume of the cuboid shown below is 64cm$^3$. Calculate the missing length. (3)



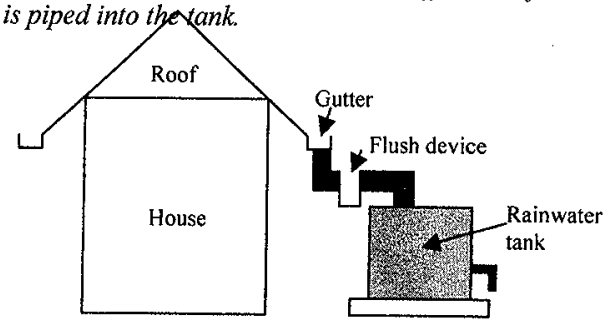

3.4. Calculate the area of the following regular hexagon: (4)




[17]

**Question 4**

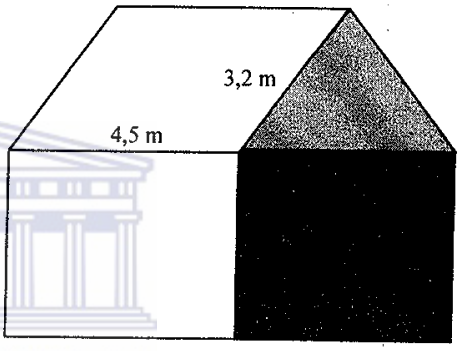
*A cylinder shaped rainwater tank is used to catch and store rainwater. The water can be used for washing, watering the garden and if properly filtered drinking. From the sketch you can see that when it rains, the water runs off the roof into the gutter. From the gutter it is piped into the tank.*




4.1. Which measurements would you have to know in order to calculate the volume of rainwater that will be collected in the rainwater tank in the picture? (5)

*The sketch aside shows the dimensions of the roof.*

4.2. What shape is the part of the roof from which the water will be collected? (1)

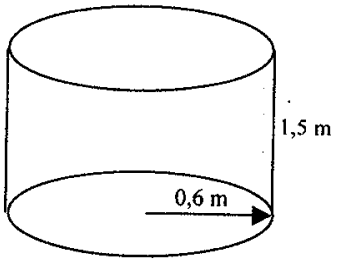



4.3. Calculate the area from which the water will be collected. (2)

4.4. Calculate the volume of rainwater collected if 20 mm of rain fell. (3)



*The sketch aside shows the dimensions of the cylinder shaped rainwater tank.*




4.5. Calculate the volume of water the tank can hold. *Correct to three decimal figures.* (3)

4.6. If 1litre = 1000cm$^3$, show all the steps to work out how many litres there are in a m$^3$. (5)

4.7. How many litres of rainwater can the tank store? (1)

4.8. If 20mm of rainfall has occurred,
a) express as a fraction, what portion of the tank has been filled with rainwater. (3)
b) simplify the fraction
c) complete the sentence: The tank will be approximately 1/....th filled with water.

[23]

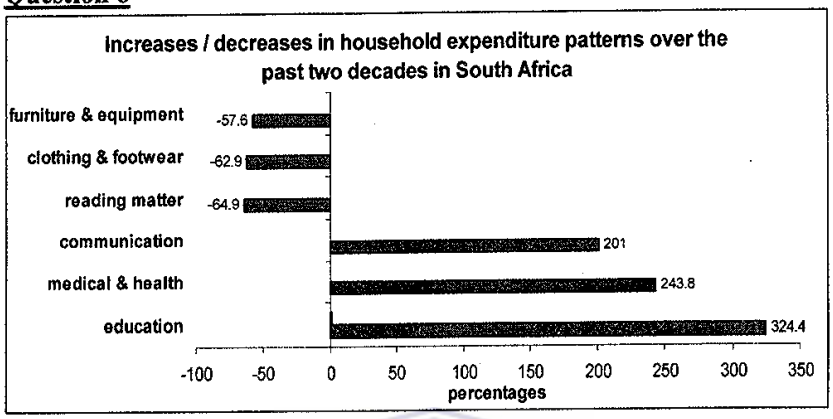
**Question 5**

*The following figures were publicized in the Cape Times "Save Electricity" special edition on 25/4/2006 regarding the sources from which electricity is generated in South Africa:*

- *93% of power is generated from coal*
- *5 % nuclear, and*
- *2 % other – mainly hydro and pumped storage*

Draw a pie chart to represent this data. [10]

**Question 6**




6.1. How long is two decades? (1)

6.2. Why do some of the bars go left and some of the bars go right? Explain their meaning. (2)

6.3. What is represented on the horizontal axis of this chart? (3)

***Answer all the following questions with complete sentences as if they were part of an official report!***

6.4. What was the %-increase for expenditure on education for South African households over the last two decades? (2)

6.5. On which category do South African households spend 3 times as much now than they did 20 years ago? (2)

6.6. Write a sentence to describe the trend depicted in this graph. (3)

[13]

**Question 7**

The annual salaries of eight employees working on a large fruit farm are as follows: R12 000; R12 000; R15 500; R15 700; R18 300; 65 000; R89 700 and R145 000.

7.1. Calculate the Mean of their salaries. (2)

7.2. Find the Mode of their salaries. (1)

7.3. Find the Median of their salaries. (2)

7.4. Which measure of central tendency is not a good indication of their average salary? Explain why. (2)

7.5. What is the range of their salaries? (2)

[9]

**TOTAL MARKS: 100**

# Grade 10 Mathematical Literacy
## August 2006

Jenni and Roscoe have been dating each other for 3 years, and have decided to get married to start a family. Jenni's parents will pay for the wedding party. Family and friends have been invited.

**Question 1**

They found a suitable venue for the wedding which will cost them R4000
The DJ is charging R400 per hour, and will be used for 2 hours
The live band costs R5 000 for the evening
The hire of equipment and decorations (table, chairs, table cloths, plates, plants, drapes, etc…) is R10 250.
The catering costs R 45 per person. (this includes the food and the waiters)
A professional video camera man will take a video of the wedding party for R1000.

1.1. Classify each of the costs as fixed or variable costs (6)
1.2. Find the total for the fixed costs. (2)
1.3. Show the calculation how to obtain the cost if 50 people attend the party. (2)
1.4. Show the necessary calculations and copy and complete the table below: (6)

| Number of people attending the wedding party | 50 | | 150 |
|---|---|---|---|
| Cost for the wedding party (Rands) | ~~22900~~ 23300 | ~~23350~~ 23750 | |

1.5. Draw a graph to represent the cost for the party, on the grid provided behind the title page of this exam paper. (8)

1.6. Write a formula for the total cost "C"in terms of the number of people attending the wedding "n". (2)
[27]



**Question 2**

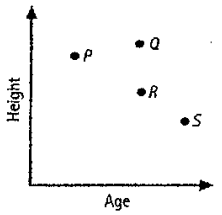
The couple sent 200 invitations to friends and family and 135 have responded that they will be attending the wedding party.

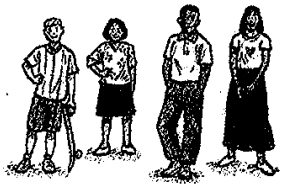
2.1. Write down the ratio of number of people attending to the number of people that were invited. (1)
2.2. Use your calculator to simplify this ratio as much as possible. (1)
2.3. What percentage of the invited guests are attending? (3)
2.4. A month before the wedding the total number of guests that will be attending the wedding went up to 147. Calculate the %-increase. (4)
[9]

**Question 3** Compound Interest calculation: $V = P \times (1 + r)^n$

3.1. Jenni's Parents invested money 20 years ago so they would be able to give Jenni a nice wedding party. They invested R5000 at the bank in an account that gave them 8% p.a. compound interest, compounded annually. What is the value of the investment now? (3)

6.5. Who is who in the graph below? (Write the letters in alphabetical order and the corresponding names next to each) (4)



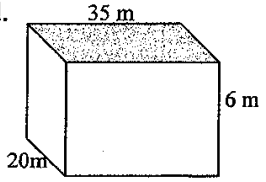
Pete 16 yrs | Gail 18 yrs | Zuko 16 yrs | Neshni 14 yrs

[27]

**Question 7**

Area of rectangle = $l \times b$
Volume $_{\text{cuboid or cylinder}}$ = area $_{\text{base}} \times h$
Area $_{\text{circle}} = r^2 \times \pi$

7.1. Below is a diagram of the hall where the party will be held. The hall is a cuboid shape.




7.1.1. Calculate the floor area to the nearest $m^2$. (2)
7.1.2. Calculate the volume of the hall in $m^3$. (2)
7.1.3. A decoration ribbon is going to be placed along the walls right around the hall. How long must this ribbon be? (2)
7.1.4. For the special lighting a cable needs to be taken from one corner of the ceiling to the opposite corner (diagonal). Use the theorem of Pythagoras to determine how long that cable must be? (4)

7.2. If a coke can (cylinder) holds 340 ml and is 11,7 cm high, what is its diameter to the nearest cm if 1ml = $1cm^3$ ? (6)

[16]



**Question 8**

At the party a lucky draw is done and there are 3 prizes to be won.
Everybody received a numbered ticket as they entered. In total 147 tickets were handed out, numbered 1 to 147.

8.1. What is the probability that John will win any of the 3 prizes to be won, expressed as a fraction? (1)
8.2. What is the probability that Jenni or Roscoe will win one of the 3 prizes, expressed as a percentage? (2)
8.3. The first prize ticket has been drawn, what is the probability that it was a number ending in a "5", expressed as a decimal? (2)
[5]

Total marks 120

Instructions:
1. Show ALL YOUR WORKING OUT, unless otherwise stated
2. WRITE IN PEN – Only sketches may be done in pencil.
3. All calculations must be to two decimal places unless stated otherwise
4. Only hand in your answer sheets.

**Question 1**

The Arrive Alive campaign was started in order to reduce the number of road deaths on South African roads. The campaign was implemented in two phases. The table below shows the number of fines issued for certain offences during the two phases.

| OFFENCE | PHASE 1 | PHASE 2 |
|---|---|---|
| Speed | 400 000 | 250 000 |
| Alcohol | 40 000 | 15 000 |
| Seatbelts | 150 000 | 40 000 |

1.1 Draw a multiple bar graph to illustrate the above information. (7)
1.2 Based on this information, do you think that the Arrive Alive campaign is working? Motivate your answer. (2)
[9]

**Question 2**

In 2005 there were 9 600 deaths due to road accidents.
2.1 If 3 800 of them were pedestrians, what percentage is this of the total number of road deaths? (1)
2.2 Arrive Alive aims to decrease the total number of road fatalities by 5%. If they are successful, how many lives will be saved? (1)
2.3 60% of all road accidents are alcohol related. Express this value as a:
a) decimal fraction b) a common fraction (2)
[4]

**Question 3**

The table shows the Budget for the Phase 1 of the Arrive Alive campaign.

| | Amount in Rand |
|---|---|
| Equipment | 25 200 000 |
| Overtime | 8 300 000 |
| Communication | 6 600 000 |
| Training and information | 9 900 000 |

3.1 Draw a pie chart to represent the above information. (show all your calculations in a table) (7)

3.2 The budget for Phase 2 of the campaign is R15 million. This is to be spent on equipment, overtime, communication and training/information in the ratio 3 : 6 : 4 : 2. Determine the amount that will be spent on each item. (5)

3.3 Calculate the %-change of the amount of money spent on communication in Phase 2 compared to the amount that was spent on the same in Phase 1. (2)
[14]

## Question 4

4.1. The Arrive Alive campaign receives a donation of R1 500 000. It is decided to invest the money for 4 years. They have two options:

- Option A: 13% p.a. compounded annually
- Option B: 12% p.a. compounded monthly

Calculate which option will be the best for them. (8)

4.2. Michael buys a second-hand motor car for R40 000. He borrows R25 000 from his Parents.

4.2.1 a) If his parents charge him 5% p.a. simple interest over 3 years, what is the total amount he must pay his parents? (4)

b) Write your answer in scientific notation. (2)

4.2.2 Calculate his monthly payments to his parents. (2)

[16]

## Question 5

On National roads the speed limit is 120km/h. Drivers who travel over the speed limit are fined. The table below shows how much a driver is fined depending on how fast they were Travelling.

| Speed (km/h) | 120 | 135 | 150 | 165 | 180 | 195 |
|---|---|---|---|---|---|---|
| Fine (Rand) | 0 | 150 | 360 | 600 | 885 | 1260 |

5.1 5.1.1 Name the dependent variable (1)

5.1.2 Name de independent variable (1)

5.2 Use the table to draw a point-by-point graph on the grid provided in addendum 1 (8)

5.3 Calculate the rate of change (gradient) between:

5.3.1 120 km/h and 135 km/h (2)

5.3.2 150 km/h and 165 km/h (1)

5.3.3 Is the rate of change constant? Elaborate. (2)

5.3.4 Calculate the average slope between 120 km/h and 195 km/h (3)

[18]



## Question 6

The table below gives the number of motorists who were fined for speeding in the Cape Town area during 2005 per month.

| January | February | March | April | May | June |
|---|---|---|---|---|---|
| 250 | 220 | 110 | 235 | 105 | 95 |
| **July** | **August** | **September** | **October** | **November** | **December** |
| 110 | 90 | 85 | 65 | 115 | 275 |

6.1 Calculate the mean, median and mode of the number of fines per month. (5)

6.2 Calculate the range of the number of fines per month. (2)

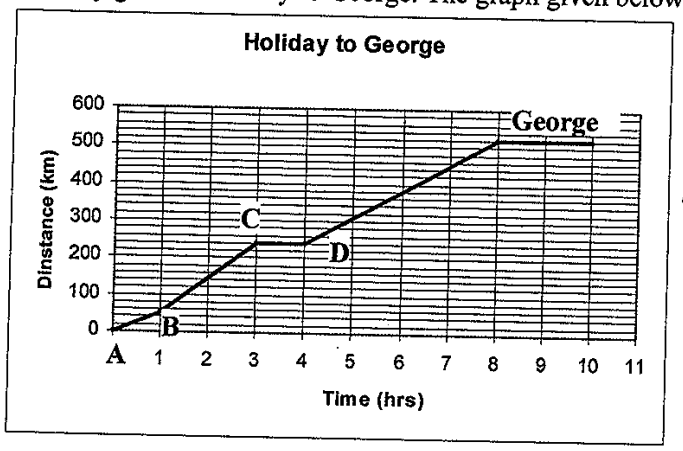
6.3 Which three months have the highest number of fines? Give a possible explanation. (4)

6.4 Organize the numbers of fines in a frequency table with 5 class-intervals. (5)

[16]

## Question 7

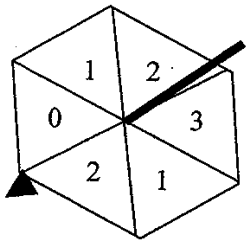
A family goes on holiday to George. The graph given below describes their trip.




7.1 Describe what is happening between points A and B. (1)
7.2 Describe what is happening between points B and C. Use the graph to motivate your answer. (2)
7.3 During their journey they stop at the Engen One-Stop. Where is this shown on the graph? (1)
7.4 How long did they stop at the Engen One-Stop? (1)
7.5 How far was the Engen One-Stop from home? (1)
7.6 The petrol costs R9,88 a litre and they buy 45 litres, how much did it cost? (1)
7.7 How long did it take them to reach their destination? (1)
7.8 The car uses an average of 7 litres per 100km. If the tank holds 50 litres of petrol, how many kilometers can they travel before filling up again. (3)
[11]



## Question 8

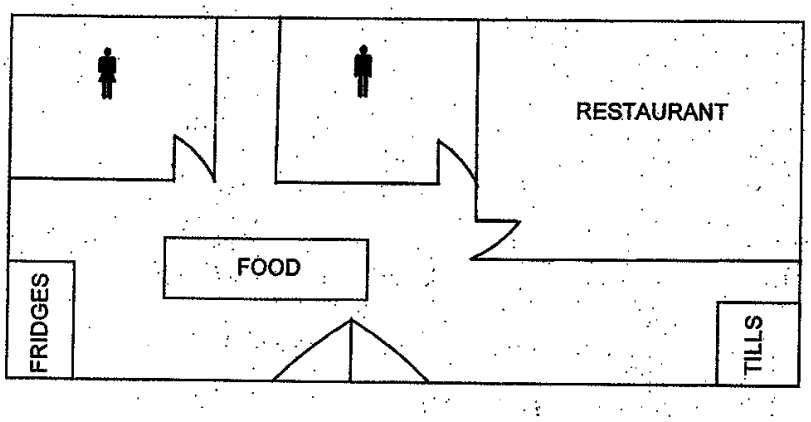



| Event | Consequence |
|---|---|
| Spinner lands on 0 | Gambler looses his money |
| Spinner lands on 1 | Gambler does not win nor loose |
| Spinner lands on 2 | Gambler gets 2 × the amount he bet back |
| Spinner lands on 3 | Gambler gets 3 × the amount he bet back |

8.1 What is the probability that the spinner lands on "0"? (2)
8.2 What is the probability that the gambler will make a profit? (2)
8.3 What will happen if a gambler bets R20 and the spinner lands on "1"? (2)
[6]

**Question 9**

Below is a plan of the Engen One-Stop at Laingsburg. The scale used is 1 : 150.
A ruler must be used for any necessary measurements. (Accuracy to the mm)




9.1 Describe what the scale used in this plan means in words. (2)
9.2 Calculate the actual length and the breadth of the restaurant in metres. (5)
9.3 Calculate the area of the restaurant in $m^2$. (2)
9.4 The owner has decided to tile the restaurant. The size of a single tile is 20cm × 25cm. Calculate how many tiles will be needed to tile the area of the restaurant. Draw a sketch to show how many rows and how many columns of tiles he will need for the restaurant so that he won't have to waste any. (4)
9.5 The tiles come in boxes of 16. How many boxes will the owner need to buy? (3)
[16]

GRADE 10 Mathematical Literacy

PAPER 2 — 100 Marks — Time: 2 Hrs

**INSTRUCTIONS**

- Prepare each answer sheet with a 3cm margin on the right side. You will leave this right margin blank for the marker.
- Label your questions correctly according to the question paper.
- Write neatly – **all answers in pen**
- You may use a calculator but, **SHOW ALL YOUR METHODS OF CALCULATIONS, round off to 2 decimal figures unless otherwise stated in the question!**
- Use Pi on your scientific calculator.
- Good Luck! Keep an eye on your time.

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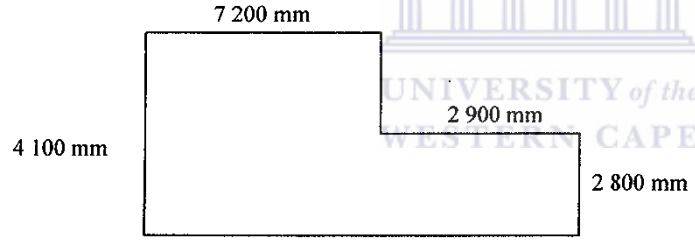
**Question 1**

A certain amount was invested at 8% per annum simple interest. After 10 years, the investor withdrew his money to find that the value of his investment is R12 600. What was the amount that he initially invested? [7]

***Value of investment*** $= P \times i \times n + P$

**Question 2**

Calculate the area of this floor in $m^2$ and the volume in $m^3$ for concrete required for a slab 100mm thick.




[7]

**Question 3**

Bank PIN numbers are made up of several numbers that can be repeated.

3.1. List all the possible numbers per digit for the PIN code. (1)

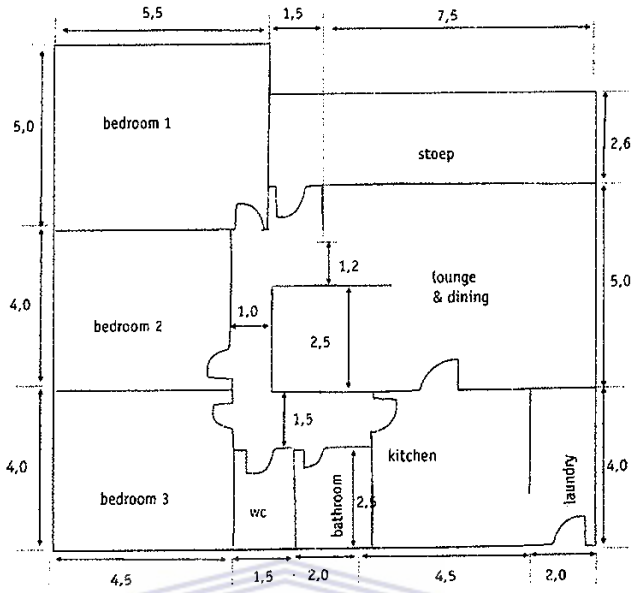
3.2. How many possible combinations are there for a 2-digit PIN number? (2)

3.3. How many possible combinations exist for a 4-digit PIN number? (2)

[5]

**Question 6**

Below is a rough drawing of a floor plan of a house, the measurements indicated are in meters.




6.1. Draw an accurate scale drawing of the stoep, to a scale of 1 : 50 (5)

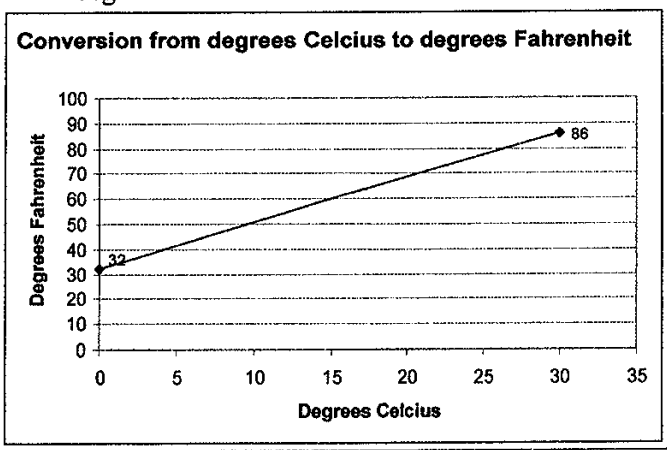
6.2. The stoep will be tiled with tiles that are 50cm sides. Draw the tiles in on the scale drawing. (2)

6.3. The tiles are sold in boxes of $3m^2$ for R135 per box. (11)
How much will you have to pay if you add 5% to the number of tiles required to cover for breakages and accidents while cutting. [18]



**Question 7**

7.1. Use the graph to copy and complete the conversion table from degrees Celsius to degrees Fahrenheit. (2)




| Temp in °C | 0 | 30 | x |
|---|---|---|---|
| Temp in °F | | | y |

**JUNE EXAMINATION 2006**

**MATHEMATICAL LITERACY**

**GRADE : 10**

**MARKS : 100**

**DURATION : 2 HOURS**

**INSTRUCTIONS TO CANDIDATES**

1. **ANSWER ALL THE QUESTIONS!**
2. **DO ALL CALCULATIONS NEATLY!**

**SECTION A**

**QUESTION 1**

**Calculate the following without the use of a calculator:**

1.1 $30-(16+1)$ **(1)**

1.2 $\frac{23+17}{5}$ **(1)**

1.3 $\frac{4^3}{2(18-14)}$ **(1)**



**Given that a=6; b=12 and c=2,calculate the value of P:**

1.4 $P=a+b+c$ **(2)**

**1.5** $P=\frac{b}{a}+c$ **(2)**

1.6 $P=\frac{b+ac}{6}$ **(2)**

1.7 **6499** 1.8 **7555** 1.9 **19999** **(3)**

**Convert the following percentage to decimal figures:**

1.10 a. 28,2% 1.10 b 116% 1.10 c 20% **(3)**

**Convert the following fractions to decimals, and then to percentages** ***(with the help of your calculator)***

1.11 (a.) $\frac{3}{8}$ 1.11 (b) $\frac{214}{45}$ **(4)**

/19/

**QUESTION 3**
**Read carefully & show all your calculations when answering the following!**

3.1 Sipho does casual work delivering pizzas. His rate of pay is R14,85 per hour Monday to Friday, and R16,26 per hour on the weekends. Calculate his total Earnings for working from 17;30 to 22;00 on Friday, and from 18:15 to 21:00 On Saturday. (5)

3.2 Zandile takes out a bank loan of R13 500 to pay for an urgent medical Operation. The bank terms are 12% p.a. over two years, compounded Annually. How much money must Zandile repay the bank? (2)

3.3 Bonga invests his first Christmas bonus of R750,00 in a bank that offers Interest rates of 9 % p.a. compounded yearly. How much interest will Bonga have earned after 12 years? (2)

3.4 A bank charges 11% interest p.a. on loans over 4 years. Olwethu borrows R12 000. Calculate:

3.4.a. The amount of interest due: (1)
3.4.b The total amount to be repaid: (1)
3.4.c. The monthly repayments needed: (2)

**/13/**

**SECTION B**
**QUESTION 4**
**COMPLETE:**

4.1 1km.= _____m 4.2 1km= _____mm.
4.3 25km.= _____cm 4.4 250ml = _____l
4.5 0,25kg = _____g **(5)**



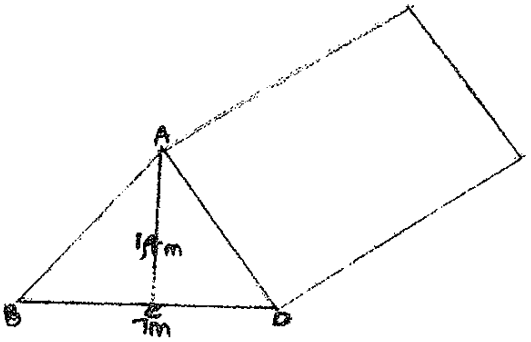
**Show all your calculations when answering the following!**

4.6 The length and breadth of a monitor of a computer is in the ratio 4:4 Calculate the perimeter of the monitor. **(2)**

4.5A swimming pool is 40 m long and 15m wide.
(a) calculate the perimeter of the pool. **(2)**
(b) Calculate the area of material needed for a cover for the pool. **(2)**

4.6 Calculate the amount of facing board needed for the following Gable roof!(correct to 1 decimal place) **(3)**

(a)

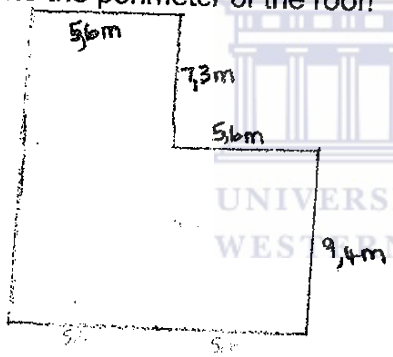



(b) Using the Theorem of Pythagoras to calculate the side AD. **(3)**
(c) What is the perimeter of the front face of the gable roof? ) **(3)**

**QUESTION 5**

5.1 (a)The following shape represent a roof of a building! Builders need an amount of tiles to cover the roof. Calculate the area of the roof in order to establish the amount of tiles needed for the roof. **(4)**

(b) Calculate the perimeter of the roof! **(4)**

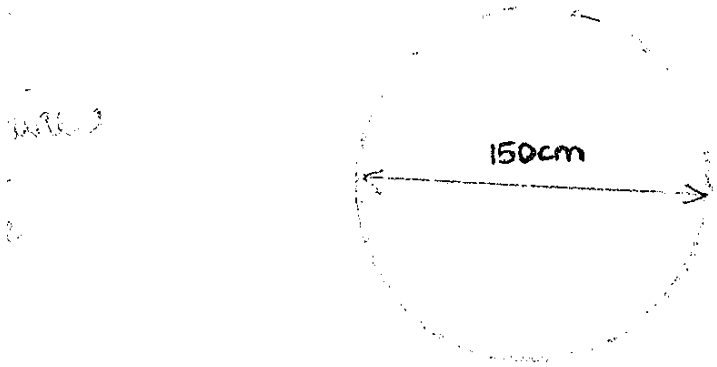




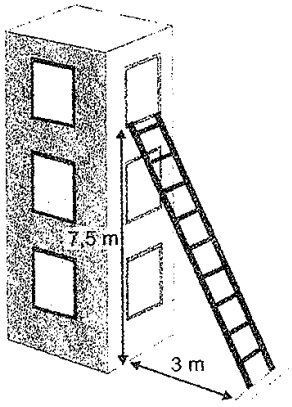

5.2 The following shape represent an umbrella! Calculate the:

(a) area **(2)**

(b) perimeter **(2)**

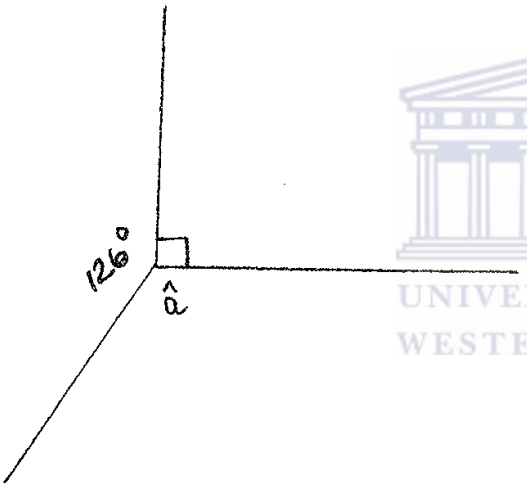


5.3 A window cleaner uses a ladder to reach the windows of a three-storey building in a narrow lane. Look at the measurements of the building in the diagram below and calculate the maximum length his ladder needs to be! **(2)**

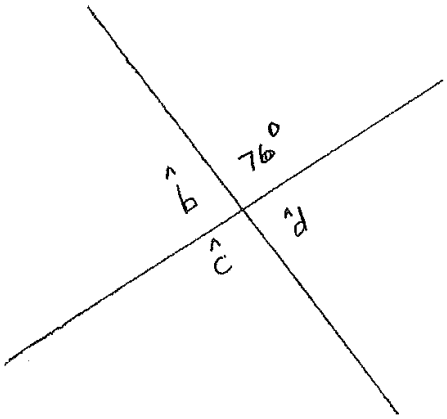



**QUESTION 6**

6.1 Calculate the size of the angles marked (a) –(d), and give reasons for your answers! **(4X2=8)**

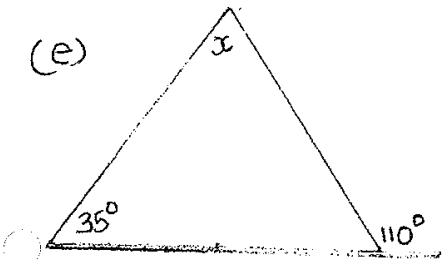




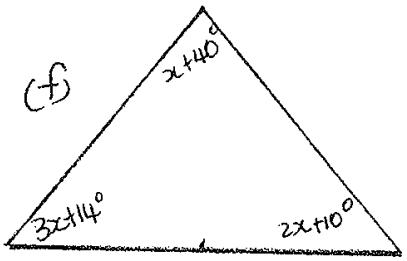



6.2 Find the value of $x$ in each of the following drawings: **(4×2=8)**

(e)

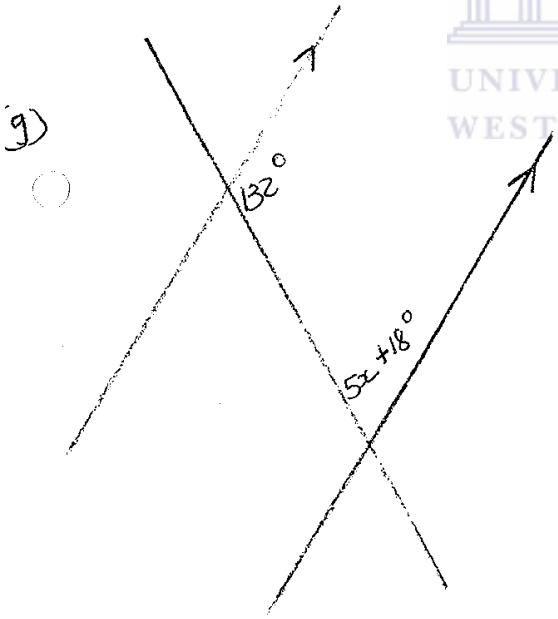



(f)

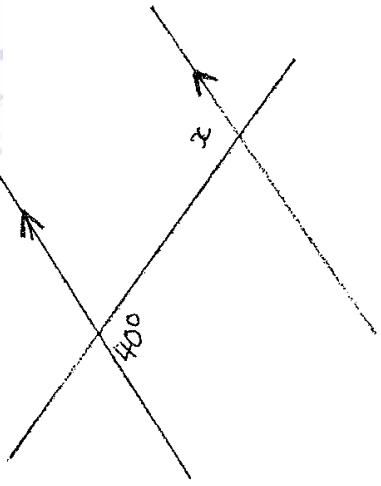





(g)




(h)




**{ TOTAL MARKS:100}**