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GRADE 12 FET: MATHEMATICAL LITERACY PAPER I
JUNE EXAM 2013



BRIDGE HOUSE
MATHEMATICS DEPARTMENT

Grade 12 FET: Mathematical Literacy Paper I

June Exam 2013

Time: 90 min

75 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1. This question paper consists of 6 questions and 8 pages (including an Answer Sheet). Please check that your paper is complete.
2. Read the questions carefully.
3. Answer all the questions.
4. Number your answers exactly as the questions are numbered.
5. Round off your answers to **two decimal digits** where necessary.
6. All the necessary working details must be clearly shown.
7. Approved non-programmable calculators may be used unless otherwise stated.
8. It is in your own best interest to present your work neatly.

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Question 1

1.1 Write the following in simplest form:

a) $(2 \times 5)^2 + \frac{3}{2} \div 10$ (1)

b) $\frac{1}{4} \div (\frac{1}{8} + 2) \times 5$ (1)

1.2 Express the following numbers in scientific notation:

a) 0,000030045 (2)

b) 122000 (2)

1.3 Express the number below in standard form:

$5,76 \times 10^{-4}$ (2)

1.4 How many Ice Creams can you buy with R 75,96 if one Ice Cream costs R 12,99? (2)

1.5 At a sale, the price of a laptop is reduced by 35%. If the original price was R 3 200, what is the new price of the laptop? (2)

1.6 The ratio of 3 different juices in a fruit cocktail recipe is 1 part orange juice, 5 parts guava juice and 4 parts mango juice. If you want to make 1 200 *litres* of fruit cocktail, how many litres of each type of juice do you need? (3)

1.7 The cost of a hotel room in the Leonardo Da Vinci hotel in Florence is R 1300 for a double room (two people) per night. If the exchange rate is 1€ = R 12,99. What is the cost per person in Euros? (3)

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Question 2

The Inca Trail is a world known hiking trail that leads to the world renowned “Macchu Picchu”. Robin-Lee decides to walk a section of the trail that is $31,08\text{km}$ long. Her average speed is $2,59\text{km/h}$.

2.1 Fill in the table below on the answer sheet provided:

Hours (h)	0	1	2	4	5		10	
Kilometers covered (km)	0	2,59		10,36		23,31		31,08



(5)

2.2 Write down the equation of the kilometers (km) travelled in the number of hours (h). (1)

2.3 Which variable (kilometers or hours) is the dependant variable? (2)

2.4 Use the table to draw the graph on the given set of axes. Label your axes. (3)

2.5 Use the graph to read off the following:

a) Approximately, how many kilometers did she cover after 3 hours? (1)

b) If she continues to walk for longer than 12 hours, how many kilometers will she travel after 14 hours? (1)

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Question 3

Le Creuset is a company that sells very good quality stoneware.

They recently released new colour to their range called Marseille Blue.



The expenses for 1 month of this new release are listed below:

Cost per pot to cover with the new colour.	R 500
Marketing the new colour.	R 520 000
Telephone	R 6 000
Electricity	R 35 000
Water	R 20 000
Hiring the factory	R 80 350

- 3.1 Write down all the variable expenses. (2)
- 3.2 Le Creuset would like to make 1 000 pots in the first month of release to introduce the colour to all the shops. What is the cost to cover 1 000 pots with the new colour? (2)
- 3.3 Calculate the total cost per month in order to make 1 000 pots. (2)
- 3.4 If 1 000 pots are made each month, calculate the total cost of making one pot. (2)
- 3.5 What is the minimum value that they have to sell each pot for in order to make a profit? (1)
- 3.6 If the selling price for one pot is R 2 300, how much profit do they make on 1 000 pots? (2)
- 3.7 Calculate the profit margin of each pot using the formula below:

$$\text{Profit margin} = \frac{\text{selling price} - \text{cost price}}{\text{cost price}} \quad (2)$$

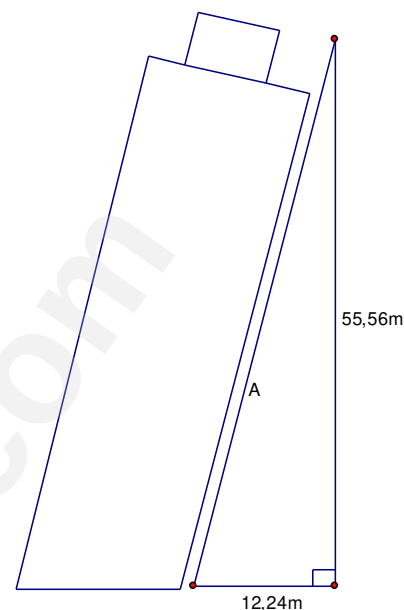
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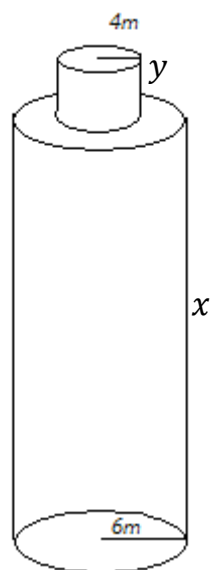
Question 4

The leaning tower of Pisa is a well known building in Italy.

- 4.1 The diagram on the right shows a sketch of the tower. The dimensions of the perpendicular height from the ground and the ground distance of the tower are given. Calculate, using Pythagoras, the actual length (labeled A) of the right side of the tower. (3)



- 4.2 A basic sketch of the tower is given below:



The radius of the big circle is 6 m and the small circle 4m. The side of the tower has a ratio of 6:1 (The side labeled x is 6 times longer than the side labeled y)

- a) Use the length calculated in 4.1 to work out the values of x and y. (3)
- b) Restorations are being done on the building and they would like to paint it.
 - i) Use the formula below to find the surface area of the big cylinder that needs to be painted. (The bottom will not be painted.)

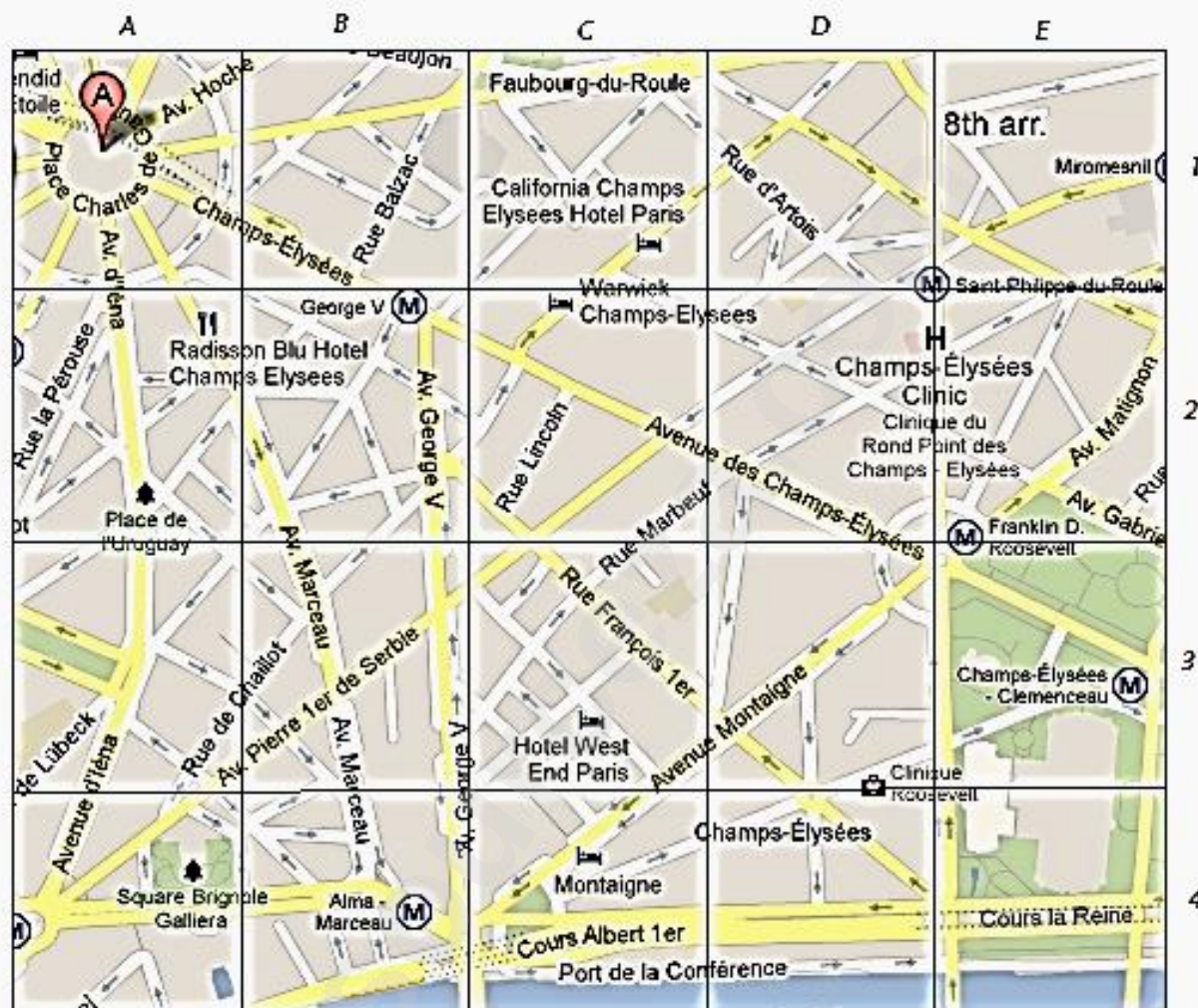
$$SA_{Cylinder} = 2\pi r^2 + 2\pi rh$$
 (3)
 - ii) Find the surface area of the small cylinder on top. (2)
 - iii) What is the total surface area of the leaning tower that needs to be painted? (HINT: The small cylinder is attached to the big cylinder.) (3)

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Question 5

Given below is a map of Paris, France.



- 5.1 The Arc de Triomphe is marked with a letter A. Use the grid to state where it is on the map. (1)
- 5.2 Where can you find the Champs-Elysees Clinic? (1)
- 5.3 Annie lives in the Montaigne Hotel (C4). She would like to visit the Arc de Triomphe. Write down directions to get there from her hotel. (3)
- 5.4 The scale on the map is given as 1: 100 000. Use a ruler to measure your path given in 5.3 and use the scale to find the actual distance between the hotel and the Arc de Triomphe in metres. (3)

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Question 6

A group of 27 adults from 8 different countries are going on a tour of India.



The following table lists the nationalities of the 27 people.

South Africa	South Africa	France	France	Germany	France	Brazil	Argentina	America
America	America	China	China	Argentina	Brazil	China	Mexico	France
France	Mexico	China	Brazil	America	France	Brazil	South Africa	Mexico

6.1 Summarise the data in a frequency table. (2)

6.2 Draw a bar graph of the on the set of axes provided. Label your axes. (4)

6.3 Use the histogram to answer the following questions:

a) Which country had the smallest amount of visitors? (1)

b) The tour operator speaks English. What other language will he have to speak in order to be understood by most of the people.
(Below is a list of languages that the people can speak.) (2)

South Africa	English, Afrikaans
China	Chinese
France	French
Germany	German, English
America	English
Brazil	Portuguese
Argentina	Spanish
Mexico	Spanish

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TOTAL FOR THIS PAPER: [75]

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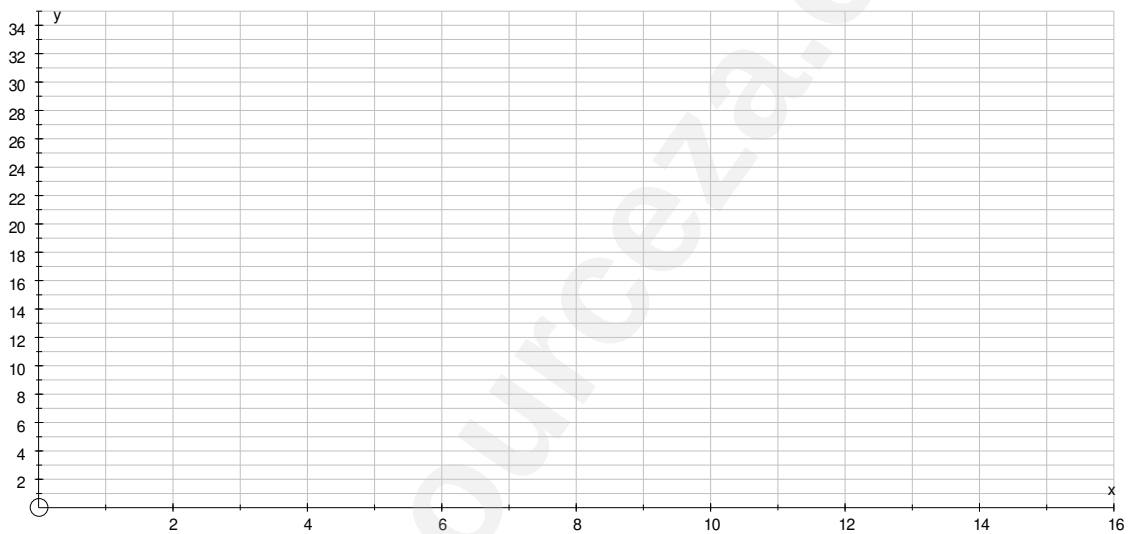
ANSWER SHEET

NAME: _____

Q 2.1

Hours (h)	0	1	2	4	5		10	
Kilometers covered (km)	0	2,59		10,36		23,31		31,08

Q 2.4



Q 6.2

