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GRADE 12 MATHS LITERACY

PAPER 1

NOVEMBER 2013

TOTAL: 150

TIME: 3 HOURS

INSTRUCTIONS

1. This question paper consists of 7 questions. Answer all the questions.
2. Number the answers correctly according to the numbering system used in this question paper.
3. An approved calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
4. All calculations must be clearly shown.
5. All the final answers must be rounded off to two decimal places, unless stated otherwise.
6. Units of measurement must be indicated where applicable.



QUESTION 1:

- 1.1 Write 30,18% as a fraction in simplified form. (2)
- 1.2 Write $\frac{112}{165}$ as a percentage (correct to two decimal places). (2)
- 1.3 Simplify the following by showing all the relevant steps:
 $1\frac{1}{3}(0,35 + 1,70) - \sqrt{2,25}$ (3)
- 1.4 If you are 441504000 seconds old, determine your age in minutes, hours days and years. (HINT: 1 year = 365 days) (4)
- 1.5 A train ticket for 60km costs R14,40. How much will a ticket for 49km cost? (2)
- 1.6 Convert 1300 South African rand (ZAR) to Euro if 1 ZAR = 11.06€. (2)
- 1.7 Convert 770cm to mm. (2)
- 1.8 Divide R1620 between three persons in the ratio 7 : 6 : 5. (4)
- 1.9 Below is the cash-sale slip for Mary after she bought some goods at the SPAR shop. Complete the following cash-slip.

SPAR		
Ferndale		
Tel: 021 185 5555		Fax: 021 185 5556
Vat No: 484275681		
Pepper		R7,12
Cinnamon		R5,67
Butter		R 8,99
Brown bread		R12,99 *
Toilet paper		R32,65
5 Balance due	1.9.1	_____
Rounding	1.9.2	_____
Cash		R 200,00
Tax Code	Taxable Value	Tax value
VAT (12%)	R54,43	1.9.3 _____
Zero VAT	R32,65	R0,00
Total VAT		1.9.4 _____
Change	1.9.5	_____

Cashier: Saun		
12:58:28		18-07-2012
Thanks for shopping at SPAR. Have a great day!		

(10)



1.10 The distance (m) covered by an object after t seconds is given by s , where
 $s = t^3 + t - 2$.

1.10.1 What is the value for t before the object starts moving? (2)

1.10.2 Determine the distance covered when $t = 2$. (2)

1.11 Simplify the following:

$$\frac{3}{2} - \frac{3}{6} \times \frac{2}{5} \quad (2)$$

1.12 Convert $2\,568\,569\text{m}^2$ to km^2 (correct to 4 decimal numbers). (2)

1.13 State whether the following statement is certain, most likely or impossible:

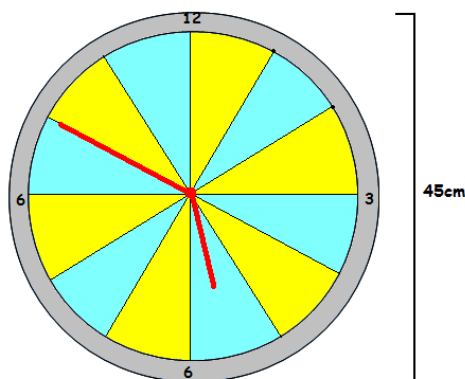
All South Africans go to Durban on New Years day. (2)

1.14 A recipe for 24 chocolate brownies required 250 ml flour. How much flour will be needed if you want to bake 84 chocolate brownies? (2)

[43]

QUESTION 2:

2.1 The diagram below shows a wall clock. The clock is divided into 12 equal parts called sectors.



2.1 Half of the sectors are yellow and the other half is blue. If half of the yellow sectors are changed to white, what fraction of the clock will be white? (2)

2.2 Write down the time(pm) reflected on the clock in digital notation. (2)

2.3 How many degrees are represented by each sector? (2)



- 2.4 If the diameter of the clock is 45 cm, calculate the circumference of the clock.

HINT: $Circumference = 2\pi \times radius$ (2)

- 2.5 The diameter of the grey ring around the clock is 1 cm. Calculate the area of the clock covered in yellow. (4)

HINT: $Area = \pi \times (radius)^2$ [12]

QUESTION 3:

- 3.1 The Cheltenham Spa Express was a steam train that operated in the UK from 1932 to 1960. The train had an average speed of 114,8 km/h and was seen as the fastest steam train of all times. Calculate the distance that the train could cover over 65 min.

(2)

HINT: $Distance = average\ speed \times time$

- 3.2 In Germany the ICE3 electric train is in daily use with an average speed of 210 km/h. Calculate the distance this train can cover in 65 min.

(2)

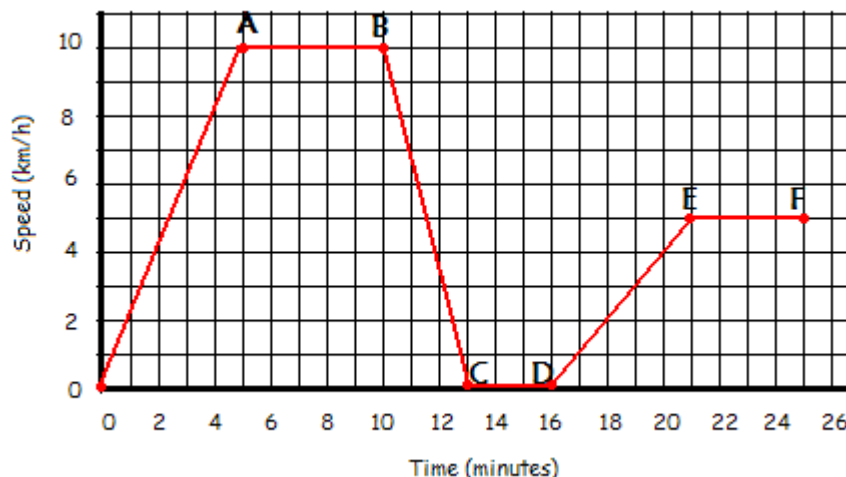
- 3.3 Calculate the percentage increase in distance when using the electric train compare to the steam train.

HINT: $Percentage\ increase\ in\ distance = \frac{Difference\ between\ distances}{Original\ distance} \times 100$

(3)

http://en.wikipedia.org/wiki/Land_speed_record_for_rail_vehicles

- 3.4 The graph below shows how the speed of the steam train changes during a journey.





Use the words, accelerating, decelerating, constant speed or at rest to complete the given statements.

- 3.4.1 During the first 5 minutes, the train is _____ (2)
- 3.4.2 Between A and B the train is moving at a _____ (2)
- 3.4.3 Between 10 and 13 minutes the train is _____ (2)
- 3.4.4 Explain what is happening between C and D. (2)
- 3.4.5 How long did this journey take? (2)
- [17]

QUESTION 4:

- 4.1 Mr Thabile wants to buy a motor boat which was advertised for R129 999 cash or R20 000 deposit + R 2 345, 55 × 60 months on hire purchase.
- 4.1.1 Calculate the total cost of the boat if he buys it on hire purchase. (2)
- 4.1.2 Calculate the amount that was paid more for the boat when choosing the hire purchase option. (2)
- 4.1.3 The current value of the boat is R125 000 but it depreciates at a rate of 15% per annum. Determine the value of the boat in three years time by using the following formula: $A = P(1 - i)^n$ (3)
- 4.1.4 The motor boat has a petrol tank that can hold 110 litre of petrol. Determine the cost to fill the tank if the petrol is sell at R12,26 per litre. (2)
- 4.1.5 If the motor boat can travel 25 km on 2 litres of petrol, how far can the boat travel with a full tank? (3)
- 4.2 William writes his income and expenses in a table.

INCOME		EXPENSES	
Salary	R14 568	Groceries	R3 499
Overtime	R1 888	Telephone	R590



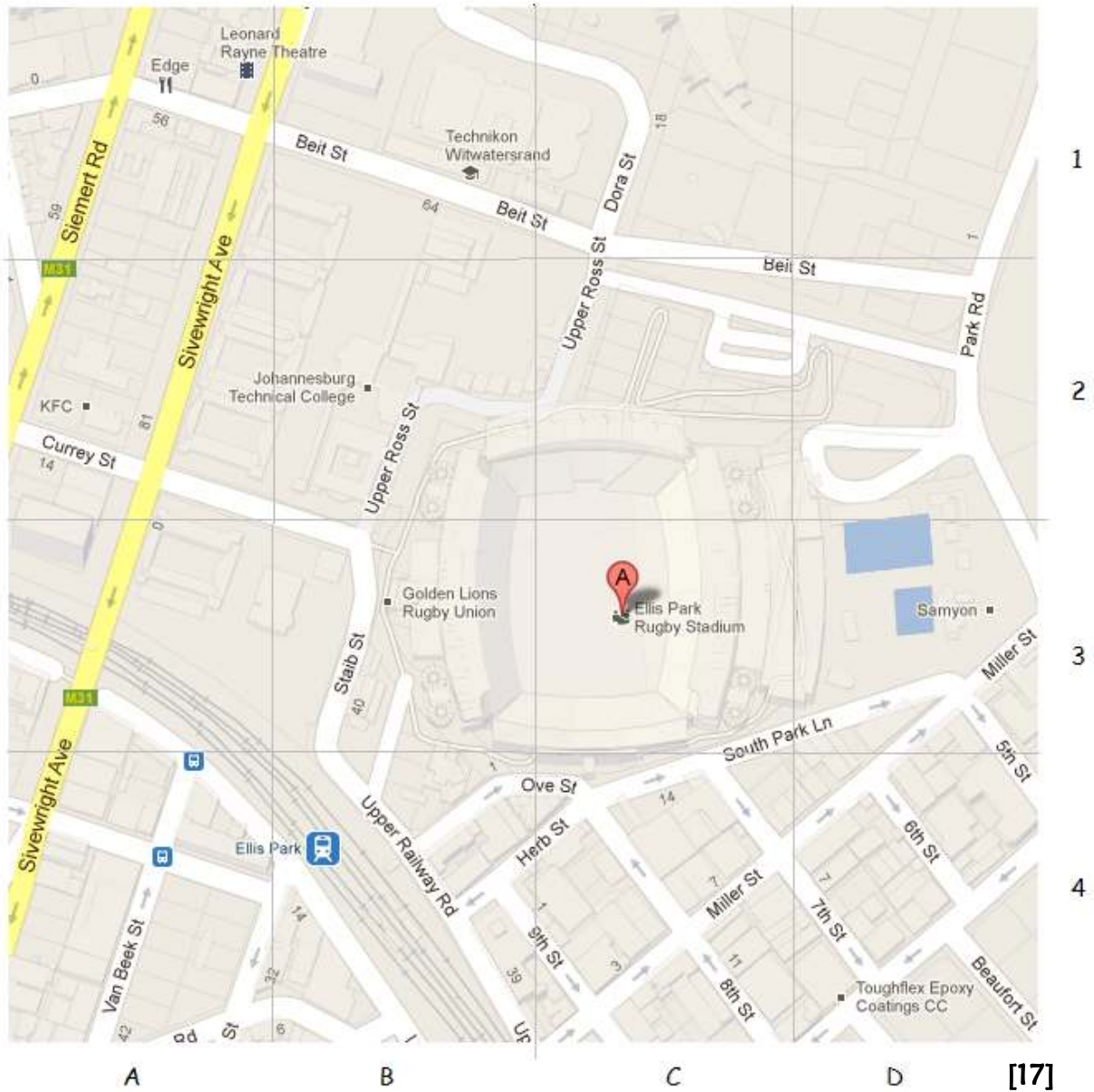
		Transport	R1 600
		Water & electricity	R1 050
		Rent	R6 870
TOTAL	A	TOTAL	B

- 4.2.1 Determine the value for A and B. (2)
- 4.2.2 What percentage of his income does he spend on transport? (2)
- 4.2.3 Will William be able to pay an insurance premium of R2755 on his current salary? Explain your answer. (2)
- 4.2.4 Which of the expenses is fixed? (2)
- 4.2.5 Name expenses that are hidden costs which William has not indicate in the table. (2)
- 4.2.6 Will William be able to pay all his expenses if he does not receive overtime? Explain your answer. (2)
- [24]

QUESTION 5:

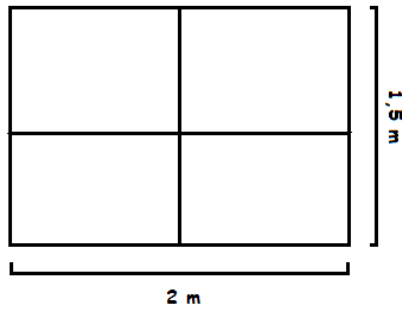
Below is the street map of Ellis Park Rugby Stadium and the surrounding area. Use the map to answer the following questions.

- 5.1 Give the grid reference for Ellis Park Rugby Stadium. (2)
- 5.2 Name the two education institutes in this area. (2)
- 5.3 Name the street in which public busses operates. (2)
- 5.4 What is the name of the train station in this area? (2)
- 5.5 What street runs in front of the Golden Lions Rugby Union office? (2)
- 5.6 If the play, Lost people, shows in a theatre in this area, what is the name of the theatre? (2)
- 5.7 Tickets for the play are sold at R155 per person. How much will a group of seven friends pay to see the play? (2)
- 5.8 Explain the route you have to follow if you are going from the Golden Lions Rugby Union to the theatre. (3)



QUESTION 6:

John wants to build a house and he came up with the floor plan for the house as indicated in the diagram below.

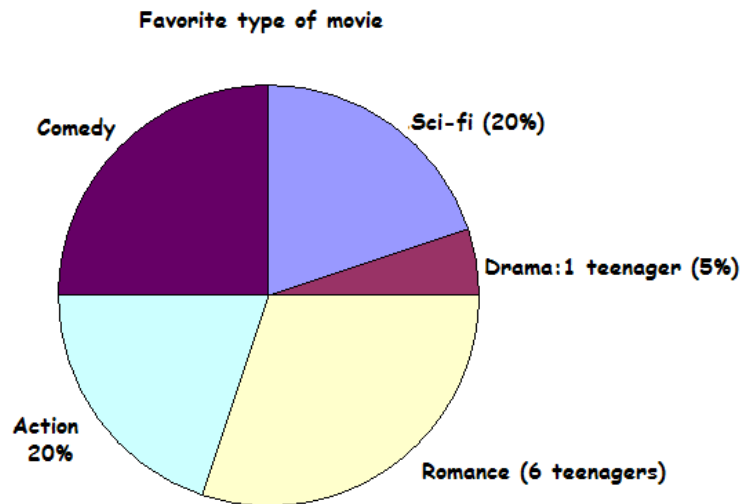


When buying curtains for a window, the number of meters must be double the width of the window. If the material for kitchen curtains cost R102,98 per meter, calculate the cost for the kitchen windows. (3)

[18]

QUESTION 7:

7.1 The pie chart represents information regarding favourite movies that are watched by 20 teenagers. Use the pie chart to answer the questions.



7.1.1 Determine the percentage of teenagers that watch romances. (2)

7.1.2 Determine the percentage of teenagers that watch comedies. (2)

7.1.3 How many teenagers like to watch action movies? (2)

7.1.4 How big is the angle that represents the romance sector? (2)



7.1.5 Use the information in the pie chart and draw a bar graph that represents the same information. (3)

7.2. A survey of 100 people was done to analyze the relationship between gender and right- or left-handedness. The results were given as follows:

	Right-handed	Left-handed	Totals
Male	41		53
Female		9	
Totals	79		100

7.2.1 Complete the table. (2)

7.2.2 Determine the percentage of left-handed people that will be female. (2)

7.2.3 Which combination represents the modal of the data? (2)

7.2.4 Determine the ratio (in simplest form) of right-handed males to right-handed females. (2)
[19]

TOTAL: 150