

**LIVE: FINAL EXAM PREPARATION PAPER 2**
**02 NOVEMBER 2014**

**Lesson Description**

In this lesson we:

- Work through selected examination questions focussing on :
  - Measurement
  - Finance
  - Data Handling & Probability


**Exam Questions**
**Question 1**

In order to save money, many people collect the rainwater from the roof of their homes for either flushing toilets or for watering their garden. The owners of the house below have decided to catch all the run-off from the one side of their roof as illustrated below.

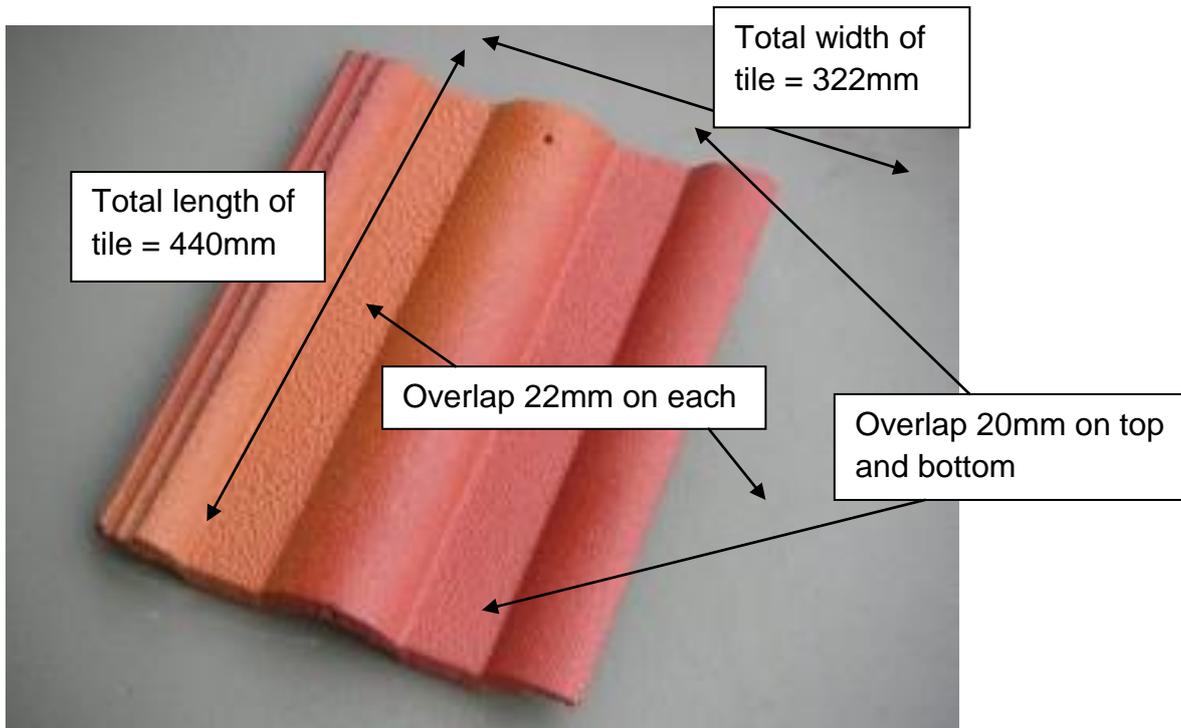


Water Drum  
 1 metre high  
 and 900mm  
 wide

\* 13 tiles needed for every column of the width of the roof

- 1.1 What is the surface area of the one side of the roof? Give your answer to the nearest  $\text{cm}^2$   
 Remember:  $\text{Area} = l \times b$
- 1.2 In one particular storm, there was a recording of 13mm of rain. How much water (in  $\text{mm}^3$ ) was collected in the water drum?  
 Remember:  $\text{Volume} = l \times b \times ht$
- 1.3 How full (to the nearest percentage) would the water drum be?  
 Remember:  $\text{Volume of a cylinder} = \pi \times r^2 \times ht$  where  $\pi = 3,14$

Below is an illustration of a tile that is used for the roof. 13 tiles are used in each column of the width of the roof.



- 1.4 How many tiles are needed in each row of the length of the roof? (6)
- 1.5 How many tiles are needed to tile the entire roof if both side of the roof need the same number of tiles? (3)

## Question 2

Unfortunately David failed his first year university and as a result, his parents send him out to work. David manages to get a job as a sales representative. He needs his own car to do this job. Fortunately his parents bought him a second hand car which has an engine size of 2 995cc and is valued at R53 000. The company for which he works agrees to pay his travelling expenses using the tables in Annexure A, shown on the next page.

- 2.1 Using the fact that David travels an average distance of 3 000km every month, determine the fixed costs (in cents) that David would charge the company for every kilometre he travelled. (3)
- 2.2 Calculate the running costs (rounded to the nearest cent) that David would incur for every kilometre he would travel if the current petrol price is R14,12 per litre. (5)
- 2.3 With the use of your answers above, calculate the operating cost David would charge his company if he travelled 124km on a specific trip. Give your answer in rands and cents.

$$\text{Operating Cost} = \text{Fixed Cost} + \text{Running Cost}$$

**ANNEXURE A**  
**FIXED COSTS**

Purchase Price	FIXED COSTS TABLE							
	Average Fixed Cost (c/km) – All costs inclusive of VAT							
	Annual Distance Travelled							
	Less than 10 000	10 001 to 15 000	15 001 to 20 000	20 001 to 25 000	25 001 to 30 000	30 001 to 35 000	35 001 to 40 000	Greater than 40 000
R50 001 – R75 000	237	158	119	96	81	71	63	57
R75 001 – R100 000	318	213	160	129	108	95	84	76
R100 001 – R125 000	344	230	173	140	118	103	92	83
R125 001 – R150 000	415	277	209	169	142	124	110	100
R150 001 – R175 000	487	325	245	198	166	146	130	117
R175 001 – R200 000	560	374	281	227	191	168	149	136

**RUNNING COSTS = A + B + C**

Engine Capacity (CC)	RUNNING COSTS TABLE		
	Average Running Cost (c/km) – All costs inclusive of VAT		
	Fuel	Maintenance	
	Petrol Factor	Service and Tyres (in cents)	Tyre Costs (in cents)
	A	B	C
Less than 1 300	6,62	17,18	8,98
1301 – 1 500	7,39	19,76	13,10
1 501 – 1 800	8,03	22,73	16,70
1 801 – 2 000	9,24	24,29	22,00
2 001 – 2 500	10,60	29,17	25,20
2 501 – 3 000	10,96	35,97	31,70
3 001 – 4 000	12,02	38,02	32,50
Greater than 4 000	14,40	52,34	41,00

**Question 3**

(Adapted from EC P2 September 2014, Question 4)

Anne formerly worked at a holiday resort in South Africa, but decided to start her own Bed-and-Breakfast (B&B) business, because she felt she has enough experience. She started her business in July 2012. For her first six months in business, she recorded the number of visitors she had locally and internationally.

She used a table below for her recording.

Visitors from:	July	August	September	October	November	December	Total
SA	15	8		5	9		67
Abroad		3	12	6	4	26	61
Total	25		22	11	13		

- 3.1 Calculate the missing values and complete the table (6)
- 3.2 Use the data in your completed contingency table to draw a stacked bar graph. (6)
- 3.3 Compare the number of visitors from abroad in August and December and give ONE reason for the difference in numbers. (2)
- 3.4 Determine the probability of a visitor drawn at random that will visit the B&B in October. Write your answer as a fraction and as decimal to 3 decimal places. (3)

A visitor from United States of America and a couple from France made reservations at Anne's B&B for a seven day visit in December. Anne's costs are as follows:

**Accommodation:** R450 per person per night

**Breakfast:** R70 per person

To confirm their booking, people have to pay a 50% deposit. The deposits are rounded to the nearest ten.

- 3.5 Show by means of calculation whether the people abroad deposited the correct amount in their currencies if the person from the USA deposited \$200 and the couple from France deposited €250. (10)

Use the following exchange rates for that date the deposits were made:

**1€ (Euro) = 10,4743384379 ZAR (South African Rand)**

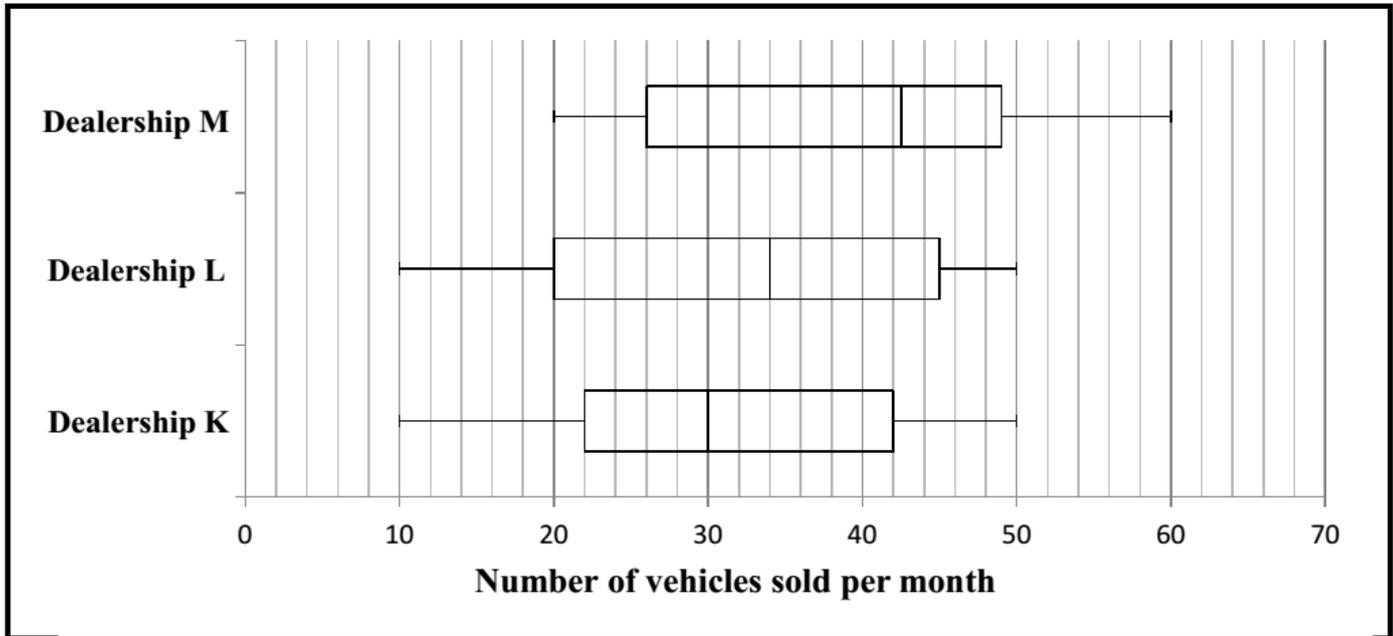
**1\$ (American Dollar) = 8,17365 ZAR (South African Rand)**



### Question 4

(Adapted from EC P2 September 2014, Question 4)

Megan went to three different car dealerships that sell pre-owned vehicles to find out how many vehicles they sell every month. She summarised the data for one year in the box-and-whisker plots below.



- 4.1 Estimate the upper quartile value of the number of vehicles Dealership M sold per month. (2)
- 4.2 For how many months were the number of vehicles sold at Dealership M more than 26? (2)
- 4.3 Explain what it means if the median number of vehicles sold per month at Dealership L is more than that of Dealership K. (4)
- 4.4 Give FOUR reasons that Megan could give to justify that Dealership M is selling more vehicles per month. (8)