LIVE: PAPER 1 QUESTIONS

Lesson Description

In this lesson we:

- Work through selected examination questions adapted from 2014 Exemplar Paper covering:
  - Finance
  - Measurement
  - Data Handling & Probability

Challenge Question

(Adapted from DBE 2014 Exemplar P1, Question 3.2.5)

In 2012, the growth rate of the South African population was –0,412% .
Determine the population of South Africa in 2011 if the population was 48 810 427 in 2012.

Use the formula:

$$\text{Percentage growth} = \frac{(\text{Population 2012} - \text{Population 2011})}{\text{Population 2011}} \times \frac{100}{1}$$

Improve your Skills

Question 1

(Adapted from DBE 2014 Exemplar P1, Question 1.1)

Pantsula is a dance company. The company has a bank account with Siyonga Bank. The bank statement dates run from the 15th of the month to the 14th of the next month.

Below is part of Pantsula's Bank Statement for a certain period in 2013.

DETAILS	DEBITS	CREDITS	DATE	BALANCE
Balance brought forward			19/04	28 955,47
Bank Statement			20/04	28 955,47
Cash deposit		2 239,10	21/04	31 194,57
Cheque 696	850,00		23/04	**A**
Stop order from NGK		3 100,00	25/04	33 444,57
Cash deposit		110,00	29/04	33 554,57
Service fee	44,20		01/05	33 510,37
Monthly account fee	55,00		01/05	33 455,37
Transaction charge	33,00		01/05	33 422,37
Cash deposit fee	116,26		01/05	33 306,11
Administration charge	8,00		01/05	33 298,11
Cash deposit		500,00	02/05	33 798,11
Cheque 697	**B**		02/05	33 540,64

Service fees are reflected on the day of the transaction but deducted at the end of the month.

1.1 Write down Pantsula's bank balance on 19/04/2013. (1)

1.2 Determine the total amount deposited in Pantsula's account from 19/04 to 02/05. (2)

1.3 Calculate the missing values A and B. (4)

1.4 On 21/04 the service fee for depositing the amount of R2 239,10 was R31,74. Determine the service fee as a percentage of the deposited amount. (3)

1.5 Write down the approximate number of weeks that this part of the Bank Statement covers. (2)

Question 2

(Adapted from DBE 2014 Exemplar P1, Question 2.1)

Marieka owns a coffee shop. She serves a mixed berry and almond polenta cake that is baked in espresso cups at her coffee shop. She uses the recipe below to make the cake.

Mixed Berry and Almond Polenta Cake

Makes 15 espresso cups

Ingredients

6 egg whites

140 g butter

140 g castor sugar

140 g ground almonds

250 g fat-free cottage cheese

75 g mixed frozen berries

25 g polenta

Bake at 356 °F until light brown,

30 to 40 minutes.

2.1 Express the baking temperature of 356 °F in °C.

Use the formula: °C = (°F – 32°) ÷ 1,8 (2)

2.2 Fat-free cottage cheese is sold in quantities of 125 g at R8,99.

Calculate the cost of the fat-free cottage cheese required in the recipe. (2)

2.3 Give, in simplest form, the ratio of polenta : mixed frozen berries. (2)

2.4 An empty espresso cup weighs 116 g. Marieka uses an espresso cup to weigh the correct amount of castor sugar required in the recipe. Write down the reading on the kitchen scale when the correct amount of castor sugar is placed in the espresso cup. (2)

2.5 Marieka places the cakes in the oven at 14:40. She takes the cakes out of the oven after 35 minutes. Determine the time at which she took the cakes out of the oven. (2)

2.6 Given that 1 kg = 2,2 lb. (pounds), express the amount of ground almonds required in the recipe in pounds. (2)

2.7 How many grams of mixed frozen berries are required to make 20 espresso cups of mixed berry and almond polenta cake. (2)

Question 3

(Adapted from DBE 2014 Exemplar P1, Question 3.1)

Jan studied the different religious denominations to which people belong in South Africa. TABLE 2 below shows the information from the 2012 population profile of South Africa.

TABLE 2: Percentage of people in South Africa that belonged to religious denominations in 2012

	RELIGIOUS DENOMINATION	SYMBOL	PERCENTAGE MEMBERS
Christian	Zion Christian Church	Z	11,1
	Charismatic/Pentecostal churches	CP	8,2
	Methodist Church	MC	6,8
	Uniting/Dutch Reformed Church	UD	6,7
	Anglican Church	A	3,8
	Catholic Church	C	7,1
	Other Christian churches	OC	36
Non-Christian	Muslim	M	1,5
	Unspecified religion	U	1,4
	Other	O	2,3
	None	N	15,1

[Source: www.indexmundi.com]

3.1 Which religious denomination has the highest percentage of people that belong to it? (2)

3.2 Determine the total percentage of people that belong to Christian denominations. (2)

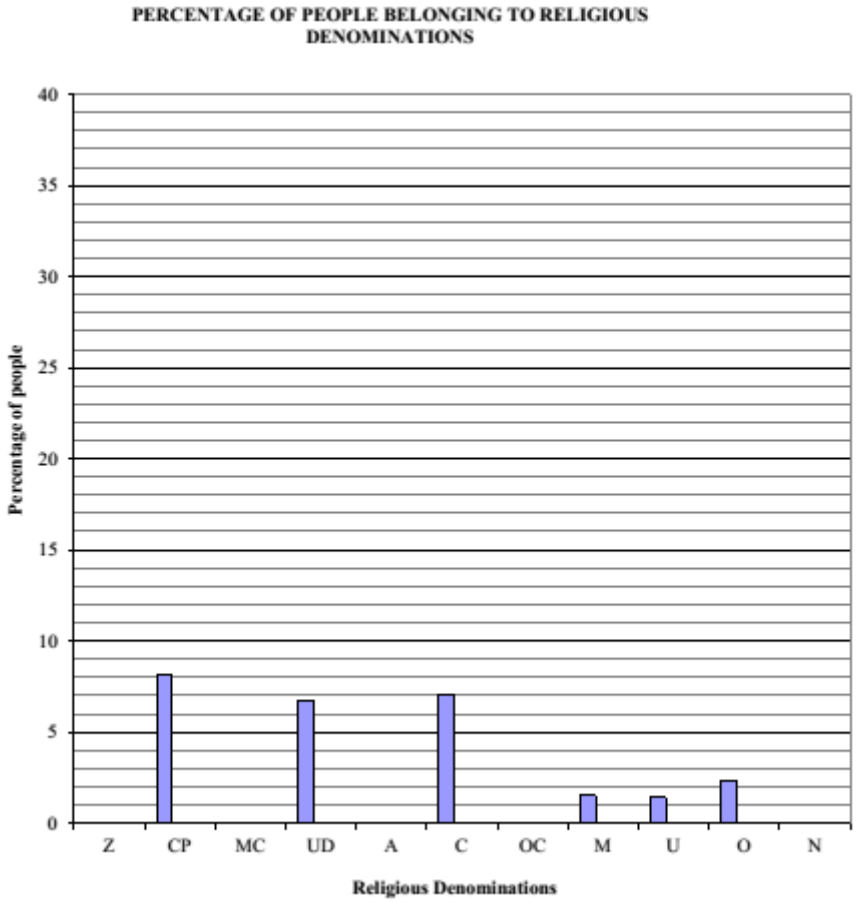
3.3 Determine the range of the data above. (2)

3.4 Arrange the religious denominations in ascending order of their percentage members. Use the given symbols. (2)

3.5 Complete the bar graph (shown on the next page) representing the percentage of people belonging to the religious denominations in TABLE 2 above. (5)

3.6 In 2012, the population of South Africa was 48 810 427. Calculate how many people belonged to none of the religious denominations in 2012. (2)

3.7 If a person were chosen at random in South Africa, what is the probability that the person would be Catholic? (2)



Question 4

(Adapted from DBE 2014 Exemplar P1, Question 5.2)

Mr Reddy gave his Mathematics learners an assignment to conduct a small survey on how much pocket money the boys and girls in the class spent during the lunch break at school on a particular day. The results of the survey (in rand) were as follows (arranged in ascending order):

The amount of money spent by the boys surveyed:

9 10 10 12 12 12 12 12 14 15 15 16 18 20 25

The amount of money spent by the girls surveyed:

0 6 6 9 9 10 10 10 11 11 11 11 12 20 25 30

4.1 Write down the total number of learners surveyed. (1)

4.2 Write down the modal amount spent by the boys. (1)

4.3 Calculate the mean amount of money spent by the girls. (4)

4.4 Determine the median amount of money spent by the girls. (3)

4.5 Calculate the difference between the maximum amount spent by a girl and the minimum amount spent by a boy. (2)

4.6 What is the probability that a boy selected at random from those boys surveyed would have spent R10,00? (2)

4.7 Express the likelihood that a learner surveyed would have spent exactly R30,00 during lunch break. (2)

SOLUTION TO PAPER 1 QUESTIONS

Question 1

1.1 R28 955,47

1.2 Amount (in rand) = 2 39,10 + 3 100,00 + 110,00 + 500,00
= 5 949,10

1.3 A = R31 194,57 – R850,00 = R30 344,57
B = R33 798,11 – R33 540,64 = R257,47

1.4 Percentage = R31,74 ÷ R 2239,10 x 100 = 1,42%

1.5 2 weeks

Question 2

2.1 $^{o}C = (356^{o} – 32^{o}) ÷ 1,8 = 180^{o}$

2.2 250 g = 2 × 125 g
Cost = 2 × R8,99 = R17,98

2.3 Ratio = 25 g : 75 g = 1 :3

2.4 Reading = 116 g + 140 g = 256 g

2.5 Time = 14:40 + 0:35
= 14:75
= 15:15
Time = 15:15

2.6 140 g = 140 ÷ 1000 = 0,14kg x 2,2lb = 0,308 lb

2.7 15 espresso cups = 75 g mixed frozen berries
1 espresso cup = 5g mixed frozen berries
20 espresso cups = 100 g mixed frozen berries

Question 3

3.1 Other Christian churches

3.2 Total = 11,1 + 8,2 + 6,8 + 6,7 + 3,8 + 7,1 + 36 = 79,7

3.3 Range = 36 – 1,4 = 34,6

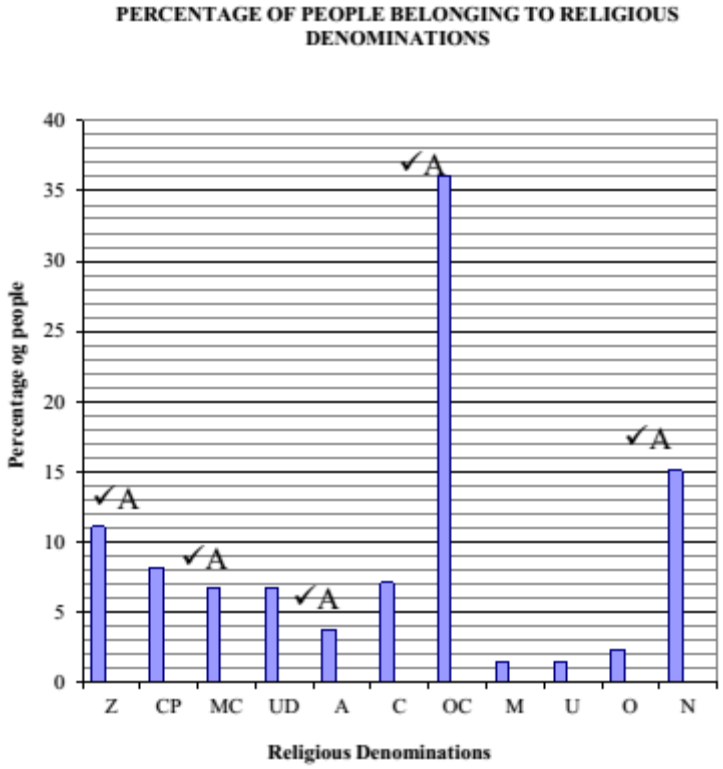
3.4 U; M; O; A; UD; MC; C; CP; Z; N; OC

3.5 See next page

3.6 N = 15,1% of 48 810 427 = 7 370 374,477 ≈7 370 374

3.7 P(Catholic) = 7,1% = 0,071

3.5



Question 4

4.1 31

4.2 R12,00

4.3 Mean = (0 + 6 + 6 + 9 + 9 + 10 + 10 + 10 + 11 + 11 + 11 + 11 + 12 + 20 + 25 + 30) ÷ 16

= R11,9375 ≈R11,94

4.4 Median = (10 + 11)÷ 2 = 10,5

4.5 Difference = R30 – R25 = R5

4.6 P(R10, boy) = 2÷ 15

4.7 P(R30) = 1 ÷ 31