Grade12 Mathematical Literacy: Memorandum Paper 2

1.1.1 Plus 94 Research ✔ ✔ 2

1.1.2 The newspaper is referencing its source of information ✔ ✔ 2

1.1.3 % of population $= \frac{7\,000}{23\,181\,997}$ as a % ✔ ✔

= 0,03% ✔ ✔ 4

1.2.1 Predicted % = 60% ✔

Actual % $= \frac{11\,650\,748}{17\,680\,729}$ as a % ✔ ✔

= 65,9% ✔ 4

1.2.2 It means that the DA will get the most votes but will not get more than 50% of the votes. This means that they will not be completely in charge. ✔ ✔

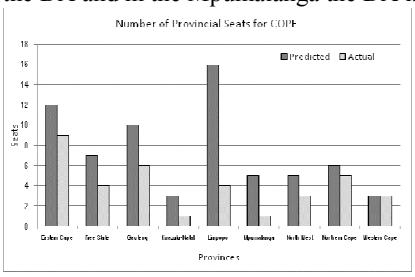
Actual % $= \frac{22}{42}$ as a % ✔

= 52,4% ✔ 4

1.2.3 It means that they predict that COPE will get the second highest number of votes in those particular provinces and hence the second highest number of seats. ✔ ✔

COPE became the official opposition in only 4 of the predicted provinces namely the Eastern Cape, Free State, Limpopo and Northern Cape. In the North West Province, they share this position with the DA and in the Mpumalanga the DA is the official opposition. ✔ ✔ ✔ 5

1.3.1



✔ ✔ ✔ ✔ ✔ graph correct 5

1.3.2 COPE did not do as well as had been predicted. ✔

The graph shows that except for the Western Cape where the predicted number of seats and the actual number of seats is the same, in all the other provinces the predicted result is more than the actual number of seats. In three of the provinces namely Kwazulu-Natal, Limpopo and Mpumalanga the predicted result was significantly more than the actual number of seats. ✔ ✔ ✔ 4

1.4 The predicted results anticipated that COPE would do much better than it did. They predicted that this would result in the ANC getting fewer votes than it actually did get. In the Western Cape they predicted that the ID would do much better than it did which meant that the ANC and the DA did better than was predicted. The result was that the DA did get above 50% of the votes in the Western Cape. This survey gave the impression that the rise of COPE would make a big difference to the number of votes that the ANC would get. The sample that they used to obtain their data was only 0,03% of the voting population, which is a very small sample and hence could have given a skewed opinion. The newspaper does not say in which province(s) the sample was taken from. ✔ ✔ ✔ ✔ ✔ 5

2.1.1 R83 900 ✔ ✔ 2

2.2.1 There is no deposit needed ✔ ✔ 2

2.2.2 R1 399 + R57 = R1 456 ✔ ✔ ✔ 3

2.2.3 60 × R1 456 = R87 360 ✔ ✔ ✔ 3

2.2.4 R34 399 ✔ 1

2.2.5 Total cost = R87 360 + R34 399

= R121 759 ✔

Total cost in advert = R121 753,81 ✔

This tiny difference is almost certainly the result of rounding ✔ ✔ 4

2.3.1 Principal debt = R88 040 ✔

Number of years = 5 ✔

Interest rate = 9,5%

Repayment factor = 21,00 ✔

Monthly installment $= \frac{88\,040}{1\,000} \times 21{,}00$ ✔ 5

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= R1 848,84 ✔

2.3.2 Monthly cost = R1 848,84 + R57
= R1 905,84 ✔ ✔
= 60 × R1 905,84 = R114 350,40 ✔ ✔ 4

2.4

	Total	Advantage	Disadvantage
1	R83 900	Most economical option. You do not have monthly finance service fees.	You will have to wait till you have saved up enough cash to purchase the car.
2	R121 759	You do not need a deposit. You can get the car even if you do not have the cash available. Monthly payments are low.	After 5 years you still owe R34 399 and may need another loan. You pay much more for the car if you do not pay cash.
3	R114 350,40	You do not need a deposit. You finish paying the car off after 5 years.	You have a higher monthly installment. You pay much more for the car if you do not pay cash.

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3.1.1 1 000 mm = 1 m ✔
Height of rain = 58 mm ÷ 1 000 mm/m
= 0,058 m ✔ ✔ 3

3.1.2 Vol of water = 80 m^2 × 0,058 m ✔ ✔
= 4,64 m^3 ✔ 3

3.1.3 4,64 m^3 × 1 000 = 4 640 l ✔
3

3.2.1 Ave monthly water consumption = 4 × 25 l /per × 30 days = 3 000 l
✔ ✔ ✔ 3

3.2.2 Surplus = 4 640 l – 3 000 l = 1 640 l ✔ ✔ 2

3.3.1 57 mm = 0,057 m
Vol of water = 80 m^2 × 0,057 m × 1 000 l
= 4 560 l ✔ ✔
Surplus = 4 560 l – 3 000 l = 1 560 l ✔ 3

3.3.2 Water stored in tank = 1 640 l + 1 560 l
= 3 200 l ✔ ✔ 2

3.3.3

Mon	Anti	Sur/De	Bal
Mar	3 120	120	3 320
Apr		-840	2 480
May		-2 200	280
Jun		-2 680	-2 400
The negative balance indicates that the family will run out of water ✔			

✔ ✔ March Anticipated calculation
✔ For all other values 11

3.4.1 1 000 l = 1 m^3 ✔
3 500 l ÷ 1 000 = 3,5 m^3 ✔ 2

3.4.2 3,5 m^3 = 3,141 × r^2 × 1,8 m ✔ ✔ ✔
r^2 = 0,619 ✔
r = $\sqrt{0,619}$
r = 0,79 m ✔ 5

4.1.1 37 030 swine flu cases ✔ ✔ 2

4.1.2 302 deaths ✔ ✔ 2

4.2.1 Rate per 100 000 = 6,97 ✔
No. of cases = 7 434 ✔
No. of people = 7 434 ÷ 6,97 ×100 000 ✔ ✔
≈ 107 000 000 ✔ 5

4.2.2 (a) Death rate per million people 4

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= 124 ÷ 107 = 1,16 per mil. ✔ ✔
(b) Death rate per million people
= 71 ÷ 56 = 1,27 per mil. ✔ ✔

4.3 The 50 to 64 years old group. The death rate per million of this group is greater than the death rate of the 25 to 49 years age group. This means that there is a greater chance of someone who has swine flu in the 50 to 64 years age group dying from it. ✔ ✔ ✔ ✔ 4

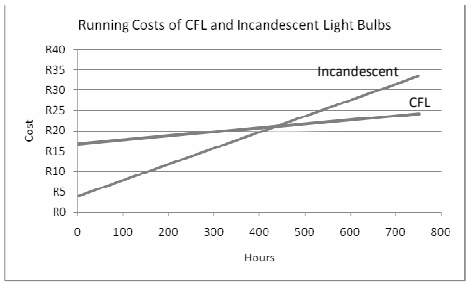
4.4 The confirmed deaths graph gives the impression that the 25 to 49 years age group is more at risk than the 50 to 64 years age group because the bars show that there have been many more deaths in the 25 to 49 years age group. However, the rate of deaths per 100 000 as calculated in 4.3 shows that the relative risk is greater in the 50 to 64 years age group. The confirmed deaths graph gives this impression because it represents the actual number of deaths, which is not related to the population size of the group. ✔ ✔ ✔ ✔ 4

5.1.1 15W/h ÷ 1 000 W = 0,015 kW/h ✔ ✔ 2

5.1.2 Hourly running cost = 0,015 kW/h × 65,35c/kWh ✔
= 0,98025c ✔
= R0,0098 ✔ 3

5.2 (a) R16,95 ✔ ✔
(b) R17,44 ✔ ✔
(c) R17,93 ✔
(d) R18,42 ✔ 6

5.3 ✔ ✔ Correctly labelled
✔ ✔ Suitable scale
✔ ✔ Points plotted
✔ ✔ Graphs drawn



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5.4.1 Between 400 and 450 hours ✔ ✔ ✔ 3

5.4.2 Within a range of R3,00 to R7,00 ✔ ✔ ✔ ✔ ✔ 5

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