

QUESTION 1

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Mr. Jomo lives with his wife and two children in Durban. Mr. Jomo got a job offer in Johannesburg that pays him a higher salary. To accept the job offer, he has to relocate with his wife and 2 children to Johannesburg. He and his wife decide to sell their house in Durban and buy a house in Johannesburg close to his place of work.

1.1.1 Mr Jomo's annual salary has increased from R366 000 to R504 000. One of the deductions from his gross salary is 1% for his UIF contribution. Determine the increase in his monthly deduction for UIF. (5)

1.1.2 The deductions from Jomo's old salary was 30% of his gross salary, The deductions from his new salary will be 35% of his gross. Jomo's financial advisor told him that the increase in his net salary (after deductions) will be below 30%.

Verify if his financial advisor's prediction was correct.

You may use the following formula:

$$\text{Percentage increase} = \frac{\text{New Net} - \text{Old Net}}{\text{Old Net}} \times 100 \quad (8)$$

1.2 A buyer has offered R1.8 million for the Jomo family home in Durban, and the house that the Jomo family has chosen in Johannesburg cost R2.2 million.

1.2.1 Write the price of the home in Johannesburg as a number. (2)

1.2.2 Mr. and Mrs. Jomo owed the bank R200 000 for their previous loan. They used part of the money from the sale of their old house to settle this outstanding loan.

Determine how much more they need to borrow from the bank to pay for their new home. (4)

1.2.3 When the Jomo's applied for a home loan on their new house, they were given the following table to show the monthly loan repayments. They have a choice of paying off the home loan in 15, 20 or 25 years.

Repayment period	Monthly payment per R100 000
25 years	R1 050
20 years	R1 180
15 years	R1 300

Note: The actual monthly repayment will depend on the value of the home loan.

Mr. Jomo decides to repay the loan over 25 years because his monthly repayments would be lower. His financial advisor said that he would save more than half a million rands if he took the loan over 15 years instead of 25 years.

Determine the monthly repayment for 15 and 25 years. Then calculate the total repayment for 15 years and for 25 years to verify whether his financial advisor was correct. (7)

1.3 Mr. and Mrs. Jomo took the advice of their financial advisor and decided to repay the loan in 15 years. They further decided that once they paid back their home loan after 15 years, they will save an amount equal to the monthly repayments for the next 15 years. Bestinvest, an investment company, offered them an investment that would pay them 4% simple interest per annum based on the total amount invested over 15 years.

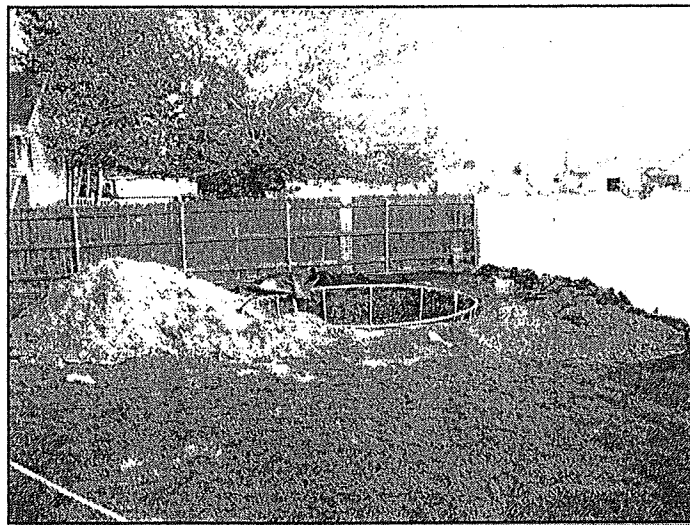
1.3.1 Using the monthly repayment for 15 years from 1.2.3 above, determine the total value of their investment after 15 years. (4)

1.3.2 Mr. Jomo bought a new car. His monthly repayment of the new car is R3 500 per month. Mr. Jomo receives a car allowance of R8 000 per month. His car allowance is taxed at 20% per month. Calculate the value of his car allowance after tax, and then determine how much of his car allowance will be left over for fuel and maintenance, after paying his car instalment. (5)

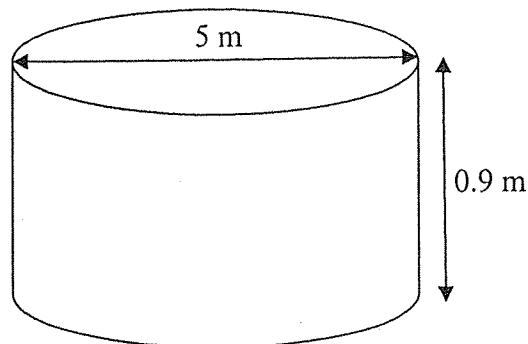
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QUESTION 2

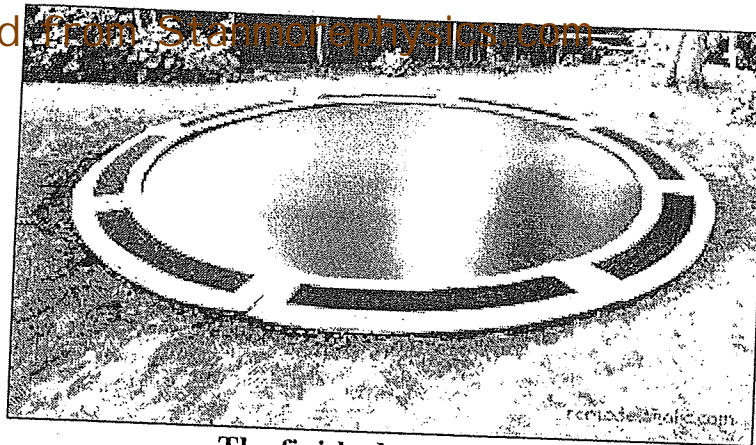
Mr. Jomo wants to build a trampoline for his children in the backyard of his new house in Johannesburg. He dug a hole with a diameter of 5m and a depth of 0.9m.



The hole Jomo dug



The dimensions of the hole Jomo dug



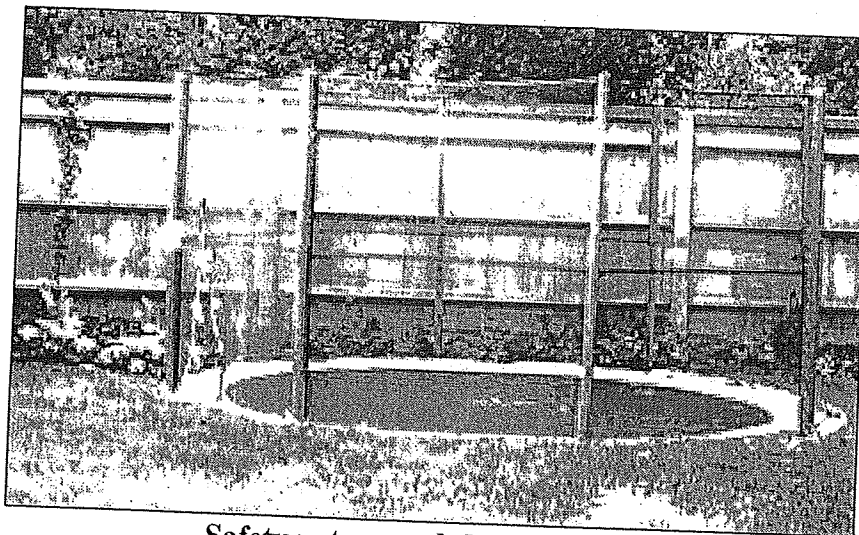
The finished trampoline

Mr. Jomo used some of the sand he dug up but he still had $\frac{2}{3}$ (two-third) of the sand left over. A company is prepared to collect the sand free of charge provided it is more than 10m^3 .

2.1 Calculate the total space the trampoline took up in Jomo's backyard. Round your answer to 2 decimal places.
You may use the formula: $\text{Area} = \pi \times r^2$, where $r = \text{radius}$ and $\pi = 3.142$ (4)

2.2 Determine whether there is enough sand for the company to collect free of charge.
You may use the formula: $\text{Volume} = \text{area of base} \times \text{height}$ (4)

Mr. Jomo is concerned about the safety of his children while they jump on the trampoline. He decides to put a safety net around the trampoline like the one shown below:



Safety net around the trampoline

The safety net is sold in one linear metre lengths (and not part of a metre). Three height options are available. The height options with their prices is shown below:

Height	Price
2m	R 260.90/linear metre
3m	R472.70/linear metre
4m	R650.50/linear metre

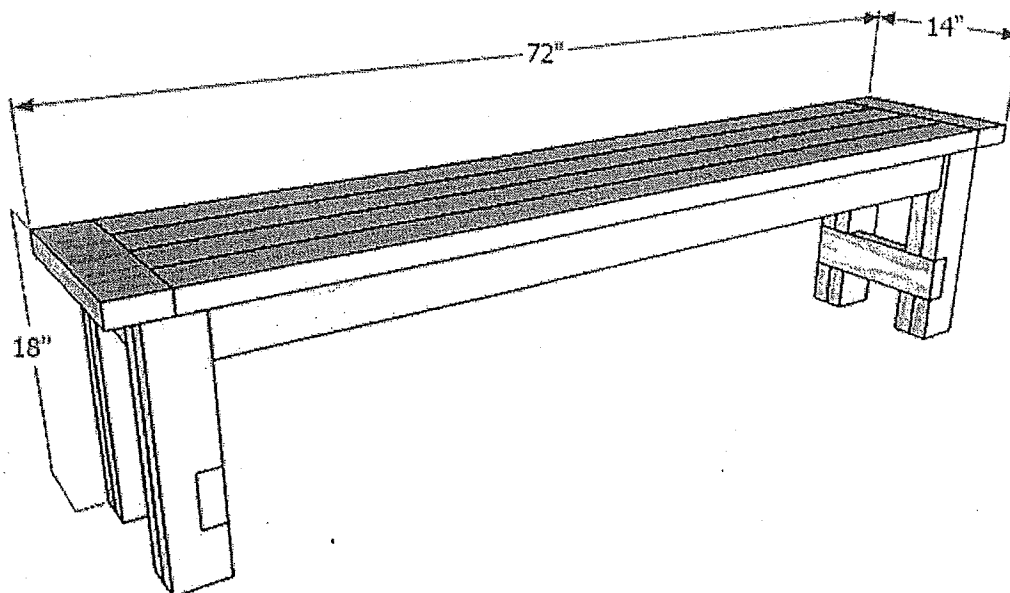
2.3 Mr. Jomo is undecided whether to buy the 3m or the 4m safety net. Jomo's wife claims that if he buys the 3m high safety net he would save more than R2 700. Verify whether Mrs. Jomo's claim is true.

You may use the formula:

$$\text{Perimeter} = \pi \times d, \text{ where } d = \text{diameter} \text{ and } \pi = 3.142$$

(8)

Mr. Jomo plans to make a bench on which to sit and watch his children while they played on the trampoline. He searched the Internet and found a simple bench that he could make. The dimensions however, were given in inches.



Wooden garden bench that Jomo wants to make

2.4 In order for his children to sit on the bench as well, Jomo does not want the bench to be higher than 0.5 metre. Does the height on the diagram meet his requirement?

You may use the conversion: 1 inch = 2.54 cm.

(4)

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QUESTION 3...

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- 3.1 Mr Jomo needs to take a decision regarding the choice of schools for his children. He researched the cost of both Private and Public schools in the area of his new neighbourhood. The table below reflects costs for the year 2020 for the following high schools.

Private Schools	Fees	Public Schools	Fees
Hapari Curro	R35 520	Parktown	R3 870
Deutsche Schule	R42 770	Roosevelt	R6 500
Orban	R58 980	Northcliff	R18 980
Holy Cross	R98 995	Queens	R41 310
Crawford	R125 590	King David	R28 670
St. Andrews	R183 150	Jeppie	R26 770
		Sandown	R12 780
		Highlands	R20 780
		Sandringham	R4 590

- 3.1.1 Determine the median cost for the Private Schools in Johannesburg in the year 2020. (2)
- 3.1.2 Determine the mean (average) cost for Public Schools in Johannesburg in the year 2020. (3)
- 3.1.3 If the range in cost for the Public Schools is R37 440, calculate the range in cost for Private schools and explain what the range tells us about the cost of both Private and Public schools. (4)
- 3.1.4 With reference to the cost for Public Schools, state with reasons, which measure (median, mean or range) is the best indicator of central tendency for this data. (2)
- 3.1.5 A new Public School will be opening in the year 2021. If the mean cost of Public schools increases to R20 000, calculate the fee of the new school. (4)
- 3.1.6 Mr. & Mrs. Jomo budgeted R40 000 for school fees for each of their two children. Of all the schools listed in the table, what is the probability of them selecting a school that is within their budget? Give your answer as a percentage. (2)
- 3.2 Due to the high relocation cost, the Jomo family will no longer be able to afford a fitness trainer. The trainer used the following data to reassure the Jomo family of their health status. Part of the programme involved doing as many push-ups as possible in 30 seconds. The data collected is organized in a frequency table.

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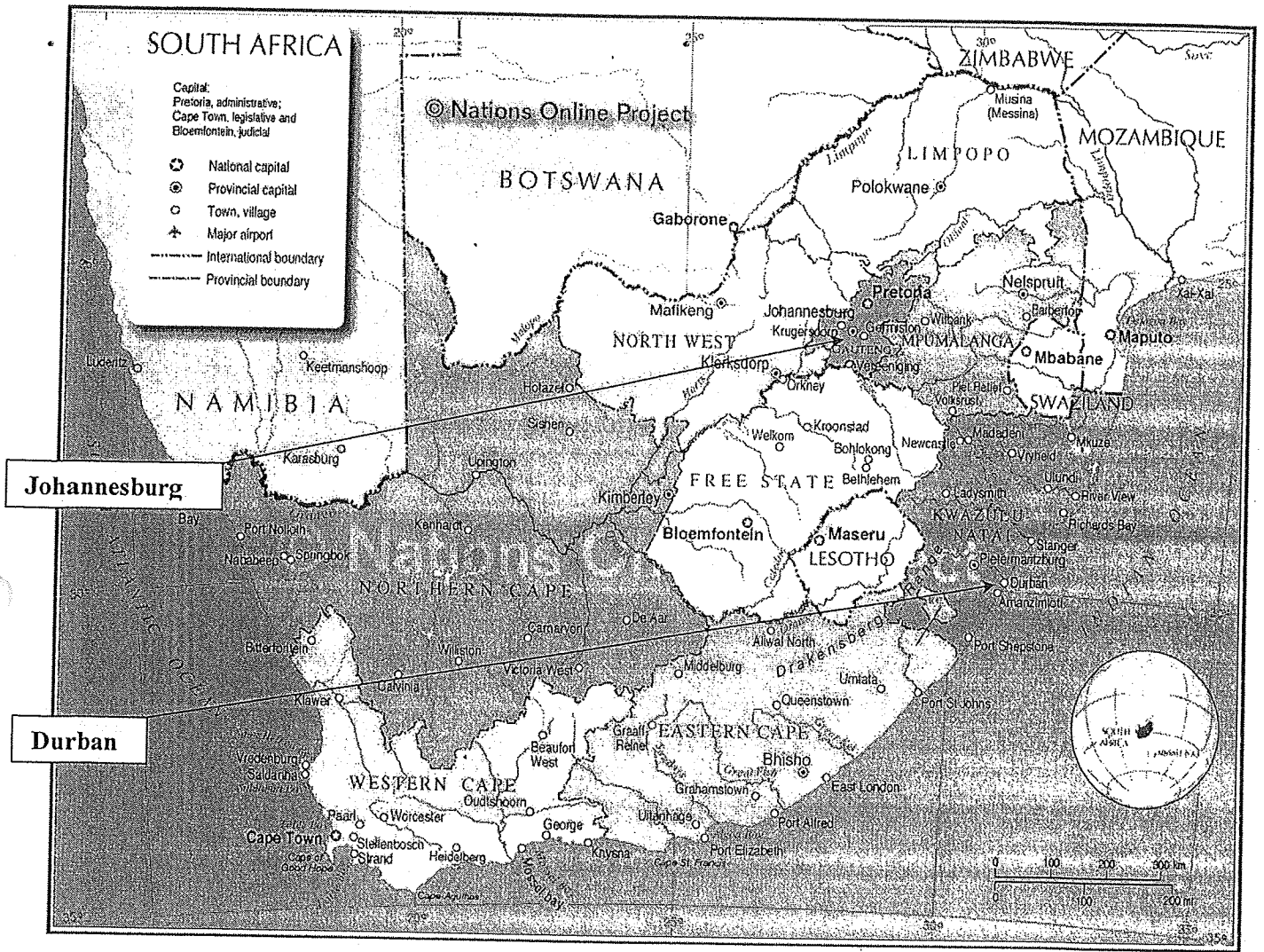
Number of push-ups	Frequency
10 – 12	1
13 – 15	6
16 – 18	3
19 – 21	7
22 – 24	3
25 – 27	2
28 – 30	1
Total	23

- 3.2.1 Represent the data in a bar graph. Use the answer sheet provided. (5)
- 3.2.2 Is it possible to calculate the mean, median or mode?
Substantiate your answer. (3)
- 3.2.3 Determine the probability (as a common fraction) of choosing a person with more than 21 push-ups in 30 seconds. (2)
- 3.2.4 Determine the probability as a percentage of choosing a person from the modal class. (3)
- [30]**

QUESTION 4

Refer to ANNEXURE A and answer the questions that follow

- 4.1 Use the given bar scale on the map and determine the straight line distance, in kilometres, travelled by the Jomo family from Durban to Gauteng. (4)
- 4.2 Convert the bar scale of this map to a number scale. Show your workings.
NB. Your number scale must be rounded off to the nearest 100 000. (3)
- 4.3 The actual distance from Durban to Pietermaritzburg is 77.8km.
Mr. Jomo's VW Caddy has a fuel tank capacity of 60 litres.
His van consumes 8.2 litres per 100km. Determine the cost of petrol from Durban to Pietermaritzburg if petrol costs R15.28/l. (4)
- 4.4 Mr. Jomo was flagged down by a metro cop in Pietermaritzburg for speeding.
He claimed that he was travelling within the average speed limit of 100km/h. He said that it took him 4 minutes and 30 seconds to cover a distance of 6 km.
Verify, with calculations, whether his claim was correct. (4)
- [15]**



Please detach and submit with your answer script.

