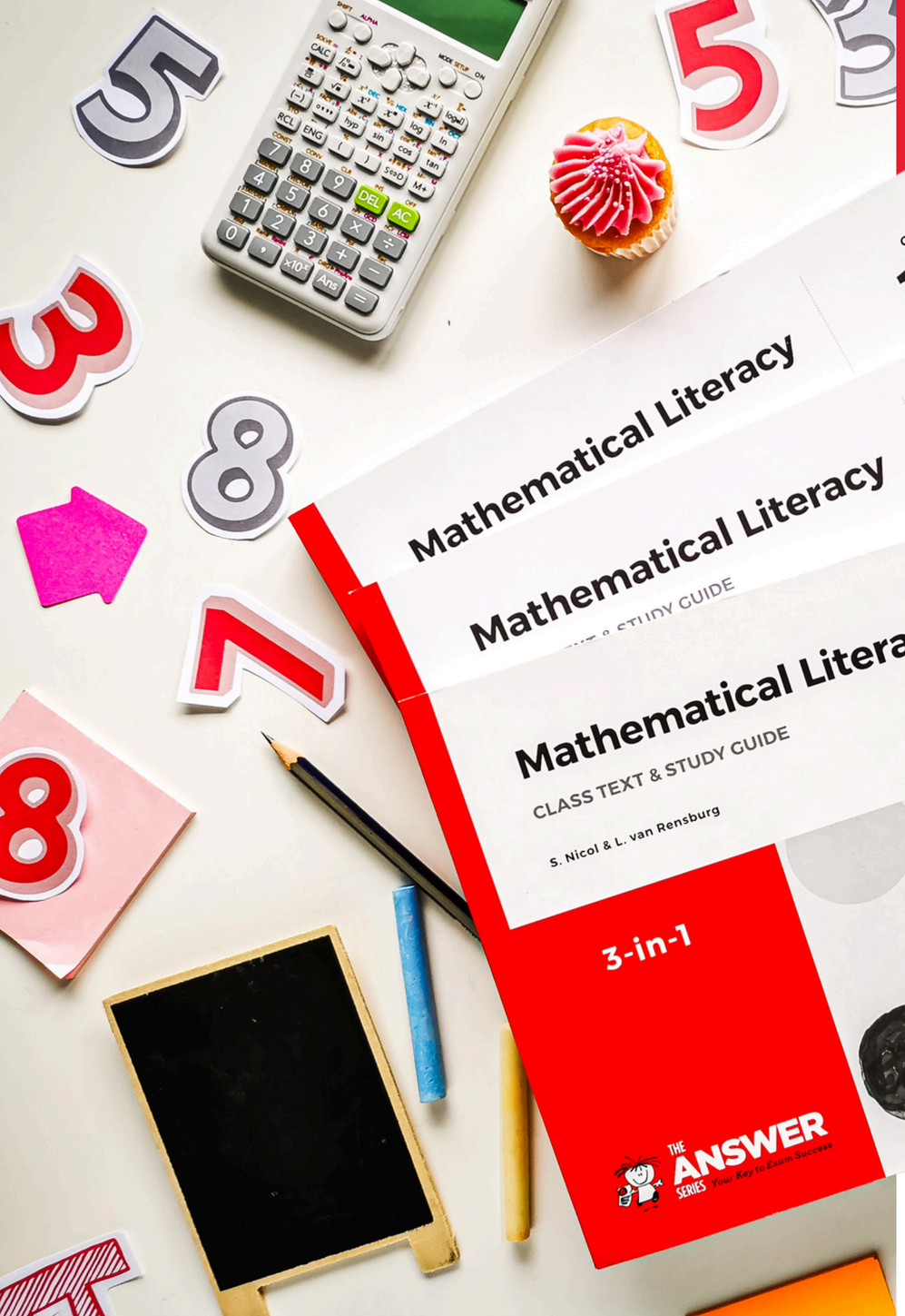


2026 MATHS LITERACY

NSC EXAM PAPER REVIEW

Paper 1 & 2

COLLECTIVE RESPONSE

In association with AMESA

Presenter **SUSAN NICOL** | Host **GRETEL LAMPE** | Guests **REVIEW TEAM**

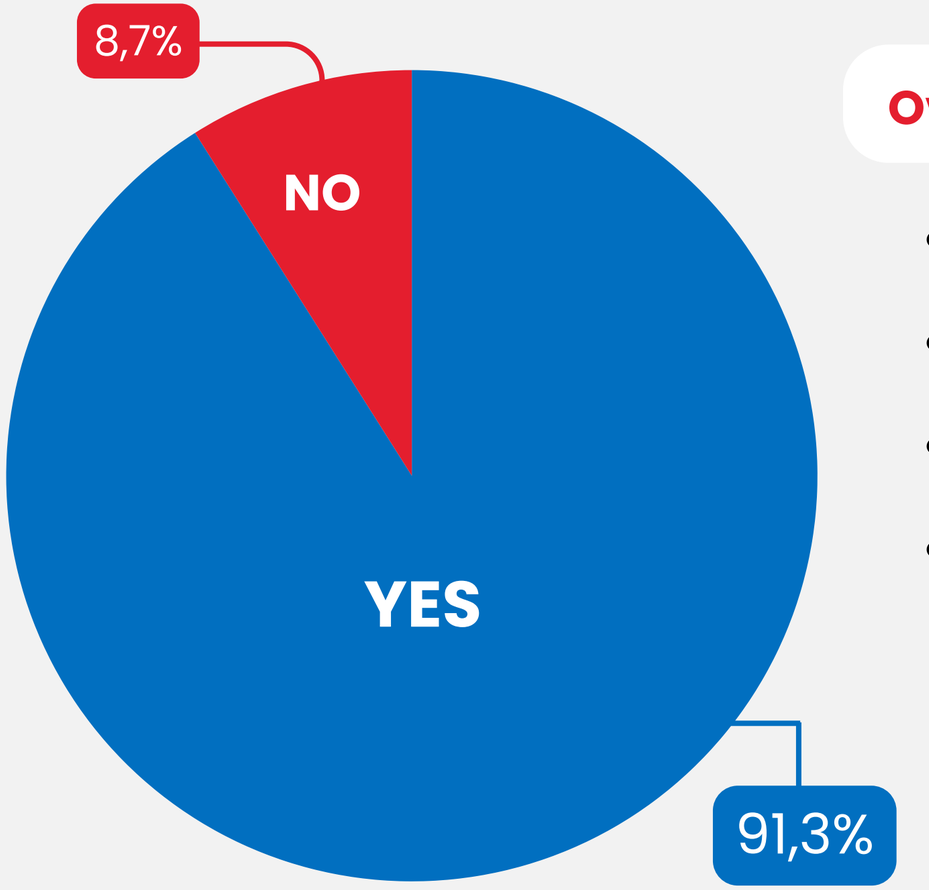
2026 NSC Maths Literacy
PAPER 1 REVIEW



CHALLENGING QUESTIONS

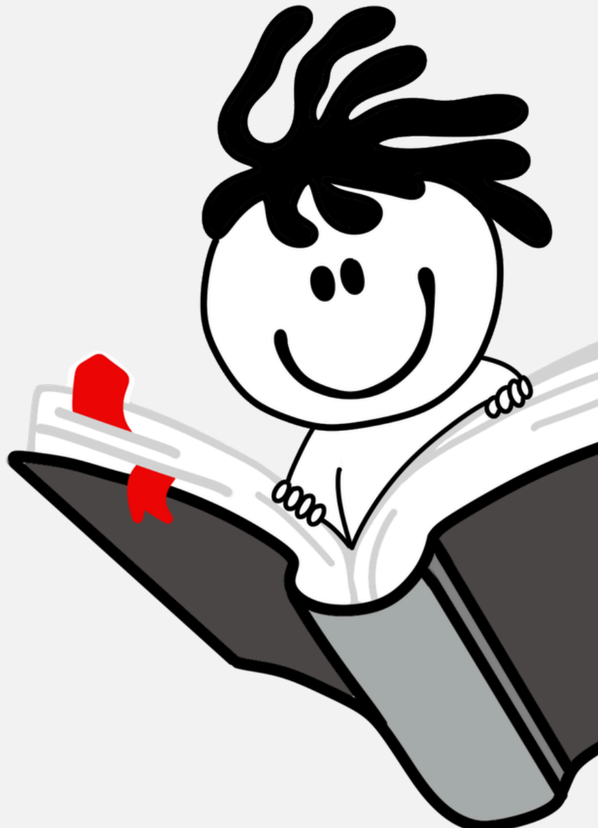


PAPER 1 OVERVIEW: Language

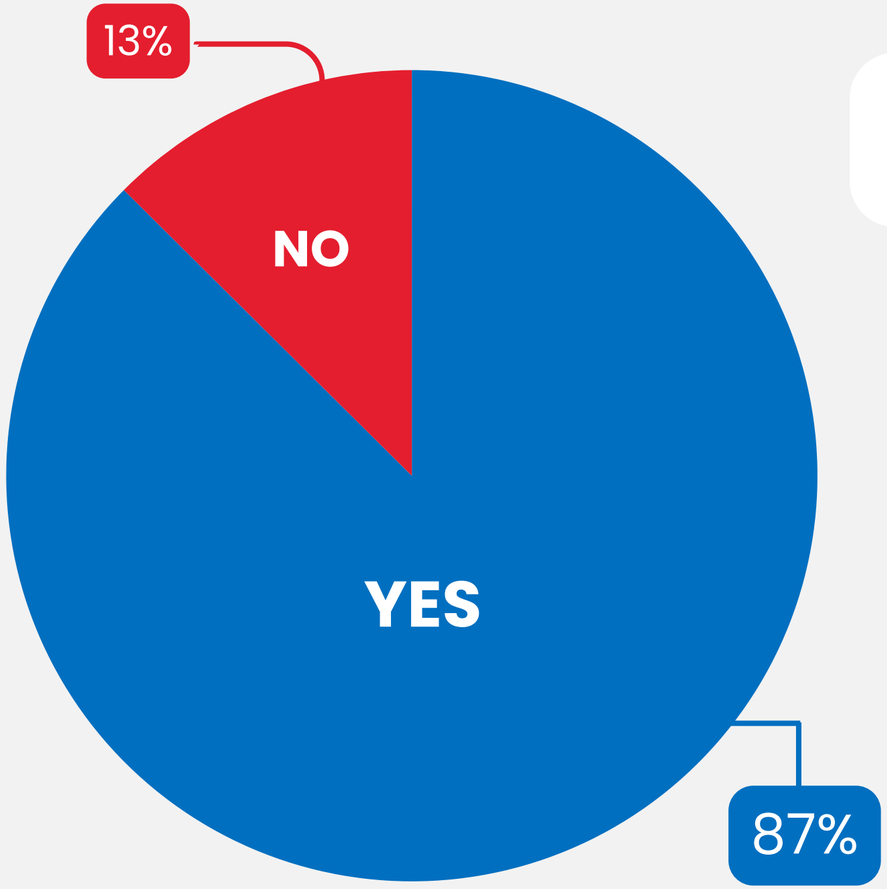


Overall, did the LANGUAGE in Paper 1 reflect wording that is:

- accessible to all learners.
- clear, direct and easy-to-follow.
- *not* ambiguous in interpretation.
- understood by learners in terms of what the question asked them to do.



PAPER 1 OVERVIEW: Diagrams, Tables & Images

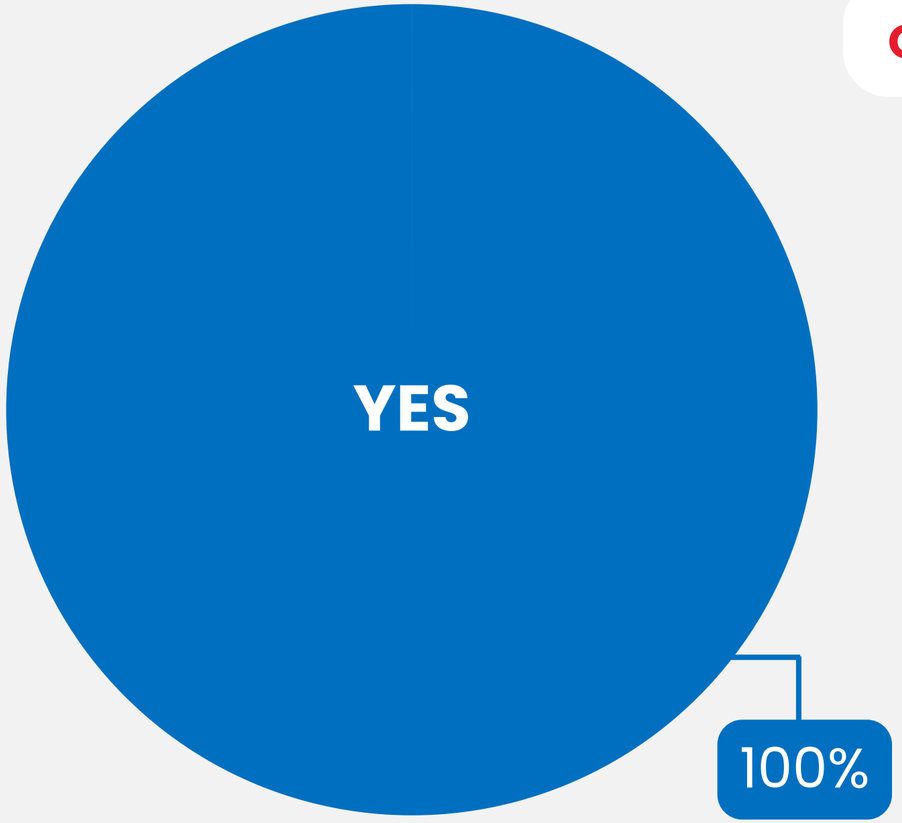


Overall, did the DIAGRAMS, TABLES & IMAGES in Paper 1 reflect the fact that they were:

- clear, well-labelled and easy-to-read.
- large enough for learners to identify the important elements/symbols/text.
- well-constructed in terms of showing the relevant data/information.

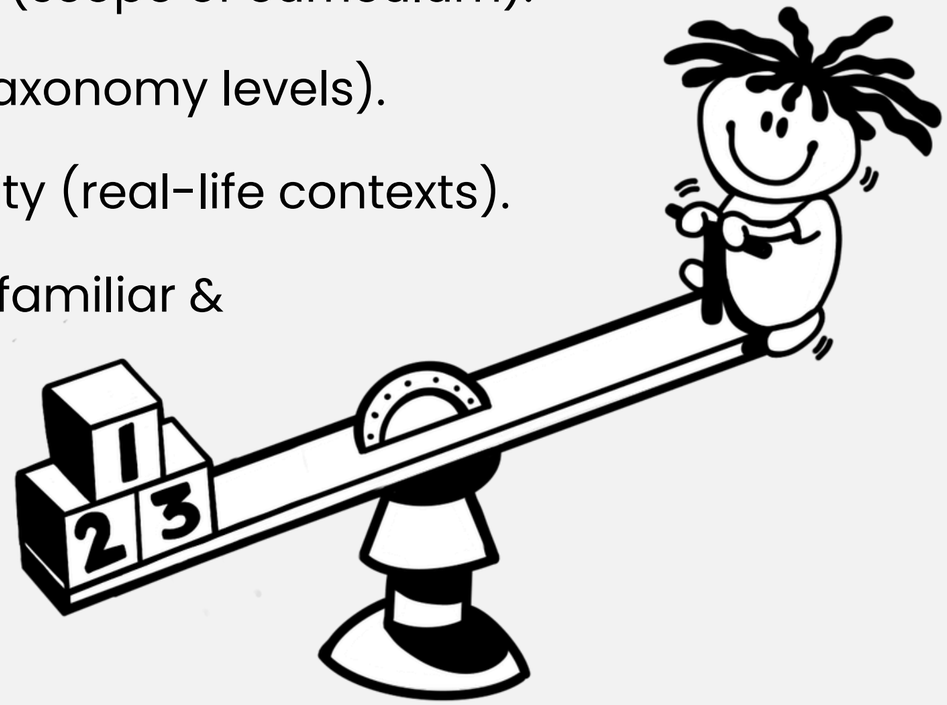


PAPER 1 OVERVIEW: Balance

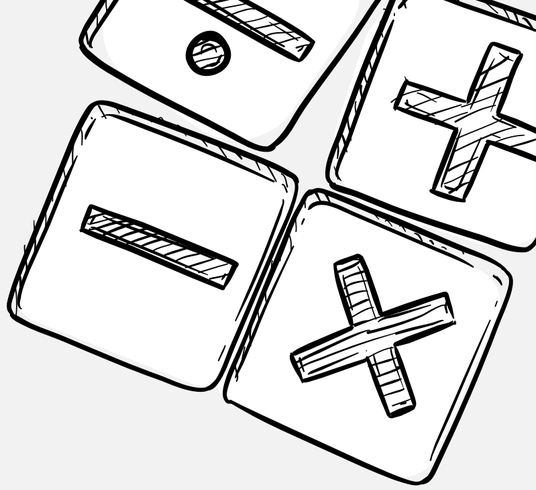


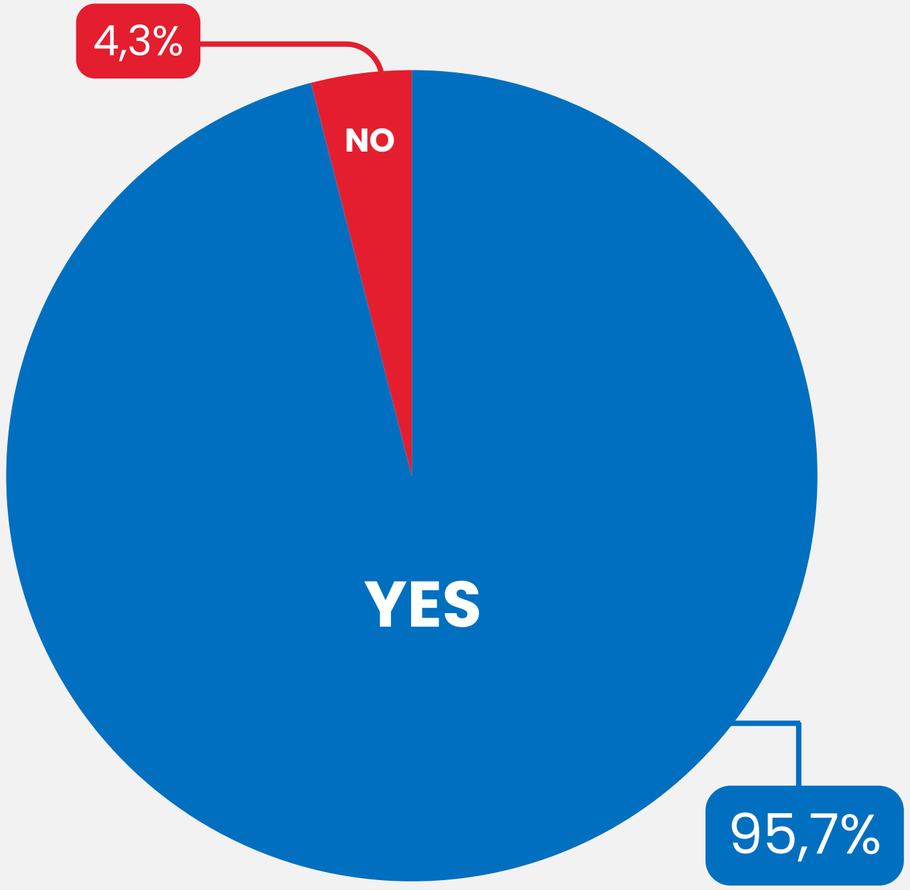
Overall, was Paper 1 BALANCED in terms of:

- curriculum coverage (scope of curriculum).
- cognitive demand (taxonomy levels).
- contextual authenticity (real-life contexts).
- contextual diversity (familiar & unfamiliar contexts).



PAPER 1 OVERVIEW: Fairness





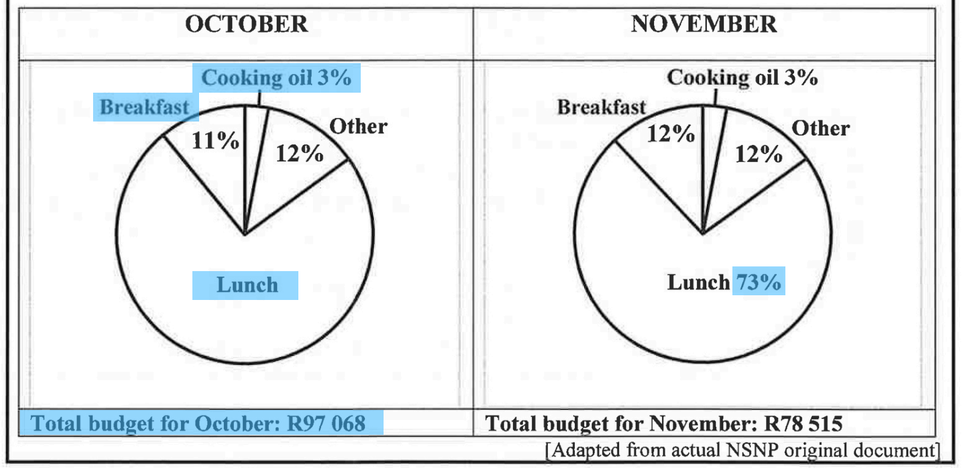
Overall, was Paper 1 FAIR, in terms of giving learners the opportunity to showcase their knowledge, skills, understanding and critical thinking?



QUESTION 1.2.4

THE ANSWER SERIES *Your Key to Exam Success*

A local school's nutrition budget for October and November is shown in the pie charts below.



[Adapted from actual NSNP original document]

Use the information above to answer the questions that follow.

1.2.1 Name another type of graph that can be used to represent the information above. (2)

1.2.2 Determine the percentage allocated for lunch in October. (2)

1.2.3 Calculate, in rand, the amount allocated for 'other' in November. (2)

1.2.4 State whether the data given in the pie charts is discrete data or continuous data. (2)

CHALLENGES

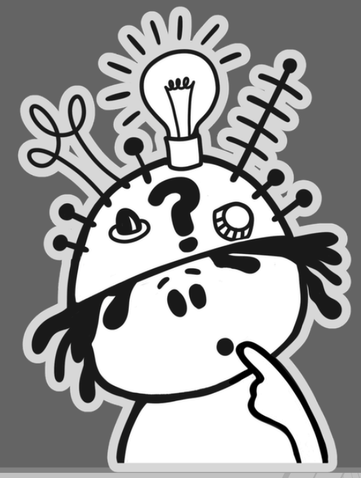
Discrete

- Whole no's
- Discrete categories i.e. breakfast, lunch, oil
- Budget given in rands & cents
- Pie charts usually used for discrete, categorical data

OR

Continuous

- % usually continuous



PROPOSED MEMO

Discrete data

QUESTION 1.3.2

THE ANSWER SERIES *Your Key to Exam Success*

TABLE 2 below gives definitions of terminology used in Mathematical Literacy.

TABLE 2: DEFINITIONS OF TERMINOLOGY USED IN MATHEMATICAL LITERACY

LETTER	DEFINITION
A	Numbers that give more information about the middle values in a data set
B	The possible outcomes which favour a specific event
C	The values that divide a list of numbers into four equal parts
D	Numbers that indicate how far data values in a data set lie apart
E	An increase in the price of a basket of goods or services that is representative of the economy as a whole
F	The points that divide a data set into 100 equal parts
G	An increase in the percentage of a basket of goods or services that is representative of the economy as a whole
H	Number of favourable outcomes divided by the number of all possible outcomes

Use the definitions given in the table to match the terminology below. Write only the letter (A–H) next to the question numbers (1.3.1 to 1.3.4), e.g. 1.3.5 J.

1.3.1 Probability (2)

1.3.2 Inflation (2)

1.3.3 Percentiles (2)

1.3.4 Measures of central tendency (2)

[28]

CHALLENGES

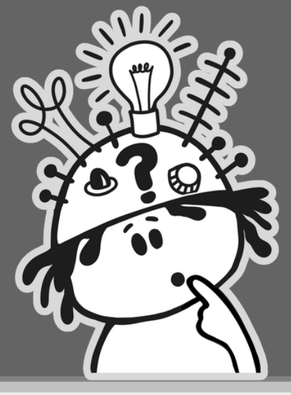
E ➡ increase in **price**

Definition of inflation

G ➡ increase in **%**

Inflation given as a %

∴ *Inflation rate*



PROPOSED MEMO

E

ADDITIONAL COMMENTS

More emphasis must be placed on the difference between inflation vs inflation rate when teaching. Same applies for interest vs interest rate.

QUESTION 2.1.1

THE ANSWER SERIES *Your Key to Exam Success*

Derrick works at a large digital company in South Africa.

TABLE 3 below shows the financial performance statement of the company for the period ending 2024 and 2025.

TABLE 3: STATEMENT OF FINANCIAL PERFORMANCE

	2025 R'000	2024 R'000
REVENUE		
Annual appropriation	3 968 611	3 312 185
Departmental revenue	3 159	16 669
TOTAL REVENUE	**3 971 770**	**3 328 854**
EXPENDITURE		
Current expenditure		
Compensation of employees	273 211	270 655
Goods and services	876 264	1 333 077
Total current expenditure	**1 149 475**	**1 603 732**
Total transfers and subsidies	**1 761 500**	**1 663 384**
Expenditure for capital assets		
Tangible assets	2 324	4 587
Intangible assets	-	982
Total expenditure for capital assets	**2 324**	**5 569**
Payments for financial assets	**1 864**	**6 970**
TOTAL EXPENDITURE	**2 915 163**	***
NET SURPLUS/(DEFICIT)	**1 056 607**	**A**

[Adapted from 2024/25 Annual Report Communications and Digital Technologies]

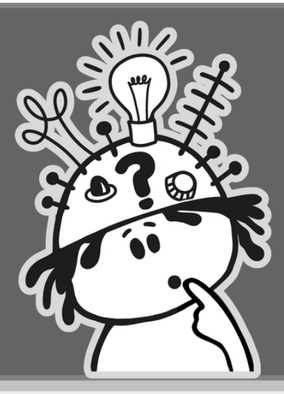
Use the information above to answer the questions that follow.

2.1.1 Write, in words, without using numerals, the actual amount for the total revenue in 2025. (3)

CHALLENGES

Table value given in **R'000**

∴ Total revenue ➡ billions



PROPOSED MEMO

3 971 770 **000**

Billion			Million			Thousand			Ones		
H	T	U	H	T	U	H	T	U	H	T	U
		3	9	7	1	7	7	0	0	0	0

∴ Three billion, nine hundred and seventy-one million, seven hundred and seventy thousand rand

QUESTION 2.1.2

THE ANSWER SERIES *Your Key to Exam Success*

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[Adapted from 2024/25 Annual Report Communications and Digital Technologies]

Use the information above to answer the questions that follow.

2.1.2 Calculate the missing table value **A**, the net surplus or deficit for 2024. (3)

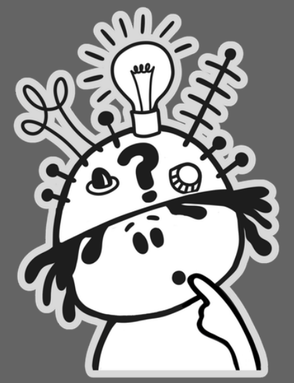
CHALLENGES

- Total expenditure not given
  ∴ calculate, but wording tricky

  'Total transfers & subsidies' ➡ no 'expenditure' word & possibly foreign concept

  'Payment for financial assets' ➡ no 'expenditure' in wording

- Asked for table value of A
  ∴ excluding R'000
  Mental switch from Q2.1.1 incl. R'000



ADDITIONAL COMMENTS

The wording 'table value' is a new way of asking questions.
It must be clear as to whether the units of the table (e.g. R'000) should be reported in the answer, or not.

QUESTION 2.1.2

THE ANSWER SERIES *Your Key to Exam Success*

Derrick works at a large digital company in South Africa.

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NET SURPLUS/(DEFICIT)	**1 056 607**	**A**

[Adapted from 2024/25 Annual Report Communications and Digital Technologies]

Use the information above to answer the questions that follow.

2.1.2 Calculate the missing table value **A**, the net surplus or deficit for 2024. (3)

PROPOSED MEMO

Total expenditure 2024

= 1 603 732 + 1 663 384 + 5 569 + 6 970

= 3 279 655

A (net surplus/deficit)

= total income – total expenditure

= 3 328 854 – 3 279 655

= 49 199



QUESTION 2.1.3

THE ANSWER SERIES *Your Key to Exam Success*

Derrick works at a large digital company in South Africa.

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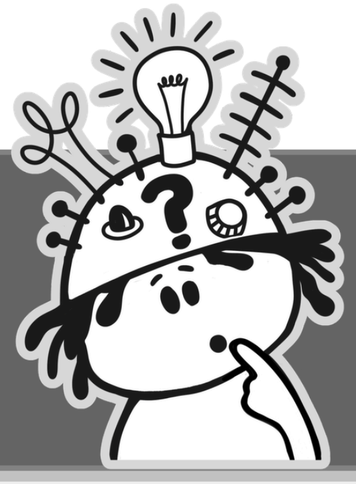
[Adapted from 2024/25 Annual Report Communications and Digital Technologies]

Use the information above to answer the questions that follow.

2.1.3 Determine the compensation of employees as a percentage of the total current expenditure for 2025. (4)

CHALLENGES

Total **current** expenditure vs
Total expenditure
∴ Careful reading!



PROPOSED MEMO

% Compensation of employees 2025

$$= \frac{\text{compensation of employees}}{\text{total current expenditure}} \times 100\%$$

$$= \frac{273\ 211}{1\ 149\ 475} \times 100\%$$

= 23,7683%

≈ 23,77%

[If total expenditure used % = 9,37%]

QUESTION 2.1.5

THE ANSWER SERIES *Your Key to Exam Success*

Derrick works at a large digital company in South Africa.

TABLE 3 below shows the financial performance statement of the company for the period ending 2024 and 2025.

2023?

TABLE 3: STATEMENT OF FINANCIAL PERFORMANCE

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[Adapted from 2024/25 Annual Report Communications and Digital Technologies]

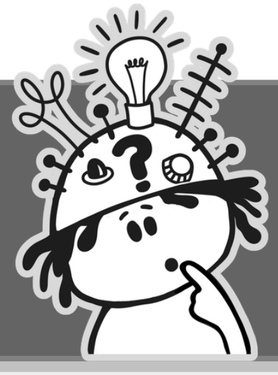
Use the information above to answer the questions that follow.

2.1.5 Determine the table value for the total transfers and subsidies in 2023 if it increased by 6,2% in 2024. (4)

CHALLENGES

- Reverse inflation Q
- Asked for **table value**

  ∴ excluding R'000



PROPOSED MEMO

Transfer 2023 X (100% + inflation) = Transfer 2024

Transfer 2023 X (100% + 6,2%) = 1 663 384

Transfer 2023 X 106,2% = 1 663 384

$$\text{Transfer 2023} = \frac{1\,663\,384}{106{,}2\%}$$

∴ Total transfers 2023 = 1 566 274,953

ADDITIONAL COMMENTS

- Learners may round off this value. However, since the actual value is in R'000, rounding off this 'table value' will change the number itself.
  (i.e. 1 566 274,953 = R1 566 274 953 vs 1 566 275 = R1 566 275 000)
- Learners should always be encouraged to write out the full calculator answer, so as to avoid rounding off penalization.

QUESTION 2.2.2

THE ANSWER SERIES *Your Key to Exam Success*

Derrick received a job opportunity in Auckland, a city in New Zealand.

TABLE 4 below shows selected average monthly incomes and monthly living costs for Cape Town and Auckland.

TABLE 4: SELECTED DATA ON AVERAGE MONTHLY INCOME AND MONTHLY LIVING COST FOR CAPE TOWN AND AUCKLAND

INCOME	CAPE TOWN (ZAR)	AUCKLAND (NZD)
Derrick's net average monthly salary (after tax)	28 341,60	5 435,76
RENT		
Monthly rent (1 bedroom) city centre	14 706,52	2 182,06
Monthly rent (1 bedroom) in the suburbs	9 900,00	1 899,81
OTHER COST		
Monthly utilities (e.g. electricity, heating, water)	2 148,48	264,18
Total expected monthly costs for a person (includes all costs except rent)	**11 738,20**	**1 780,10**

[Adapted from www.numbeo.com]

TABLE 5 below shows the exchange rates on 2 October 2025.

TABLE 5: EXCHANGE RATES ON 2 OCTOBER 2025

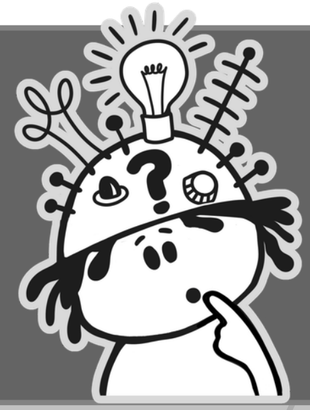
1 New Zealand dollar (NZD)	=	0, 58319513 USD
1 USD	=	17,18288 South African rand (ZAR)

[Adapted from www.xe.com]

Use the information above to answer the questions that follow.

2.2.2 Derrick lives in a suburb of Cape Town. Determine how much money he has left after paying his rent and total expected monthly costs. (3)

CHALLENGES



'Other cost' is included in
'Total expected monthly cost for a person'
(includes all costs except rent)
➡ tricky wording

PROPOSED MEMO

Money left
= income – suburb rent – total expected monthly costs
= R28 341,60 – R9 900,00 – R11 738,20
= R6 703,40

QUESTION 2.2.3

THE ANSWER SERIES *Your Key to Exam Success*

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1 New Zealand dollar (NZD)	=	0, 58319513 USD
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[Adapted from www.xe.com]

2.2.3 The price of a burger meal at McDonalds in South Africa is ZAR119,50. In Auckland, this same burger meal is NZD16,00.

Derrick stated that the cost of the burger meal in Auckland is exactly ZAR40 more than the price in South Africa.

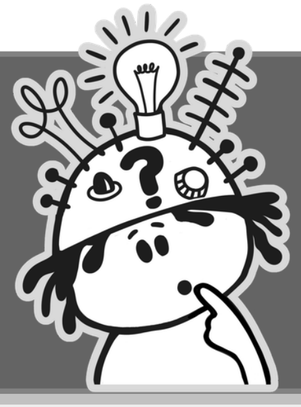
Verify, showing ALL calculations, whether this statement is VALID. (7)

CHALLENGES

'Stepping stone' exchange rate

Exchange rate with 5 & 9 decimals

➡ Rounding off errors



PROPOSED MEMO

1 NZD : 0,58319513 USD
16 NZD : ?
x 16

∴ 16 NZD x 0,58319513 = 9,33112208 USD

1 USD : 17,18288 ZAR
9,33112208 USD : ?
x 9,33112208

∴ 9,33112208 USD x 17,18288 = ZAR 160,335551
= ZAR 160,34

∴ Difference = ZAR 160,34 – ZAR 119,50
= ZAR 40,84

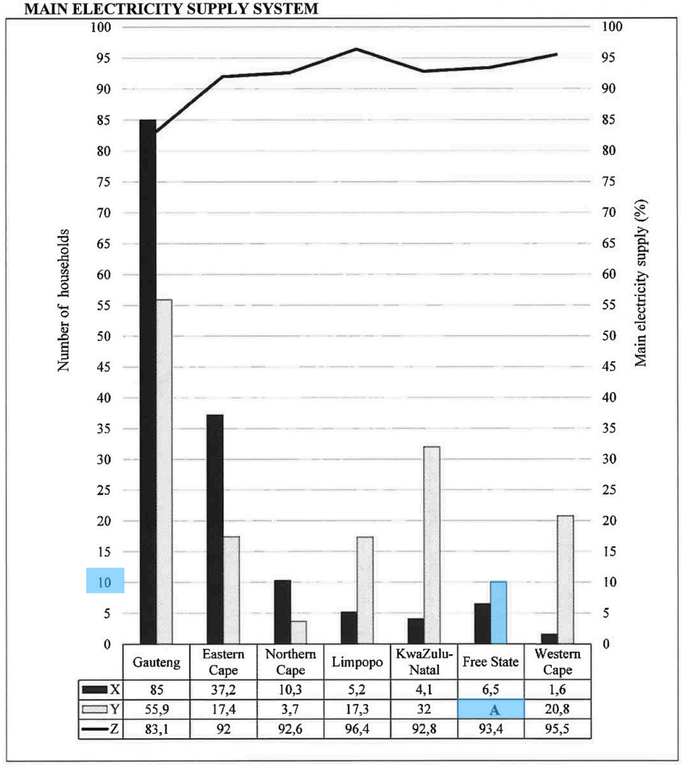
∴ Derrick's statement is **INVALID** (not exactly ZAR 40).

QUESTION 3.1.1 & 3.1.2

THE ANSWER SERIES *Your Key to Exam Success*

ANNEXURE A

NUMBER OF HOUSEHOLDS WITH FREE SOLAR POWER SYSTEMS, TOTAL NUMBER OF HOUSEHOLDS AND PERCENTAGE OF HOUSEHOLDS CONNECTED TO MAIN ELECTRICITY SUPPLY SYSTEM



	Gauteng	Eastern Cape	Northern Cape	Limpopo	KwaZulu-Natal	Free State	Western Cape
X	85	37,2	10,3	5,2	4,1	6,5	1,6
Y	55,9	17,4	3,7	17,3	32	A	20,8
Z	83,1	92	92,6	96,4	92,8	93,4	95,5

X = number of households with free solar power ('000)
Y = total number of households ('00 000)
Z = main electricity supply (%)

[Adapted from www.statssa.gov.za]

3.1.1 Write down the missing table value **A**, the total number of households in the Free State. (2)

3.1.2 State the number of provinces that do NOT provide households with free solar power systems. (2)

COMMENTS

Q3.1.1

Asked for table value ∴ excluding ('00 000)

A = 10 *[read off graph]*

∴ *Same logicl should apply to Q2.1.2 & Q2.1.5*

ADDITIONAL COMMENTS

- This question asks for the table value (i.e. excluding ('00 000) and '*the total number of households*'. Therefore, it is unclear whether A = 10 or A = 1000 000?
- There must be clarity as to whether the answer needs to be written in terms of the graph value or the actual value, including the units.

Q3.1.2

General knowledge! RSA has 9 provinces

No. of provinces do NOT provide free solar

= 9 – 7

= 2



ADDITIONAL COMMENTS

Q3.1.4

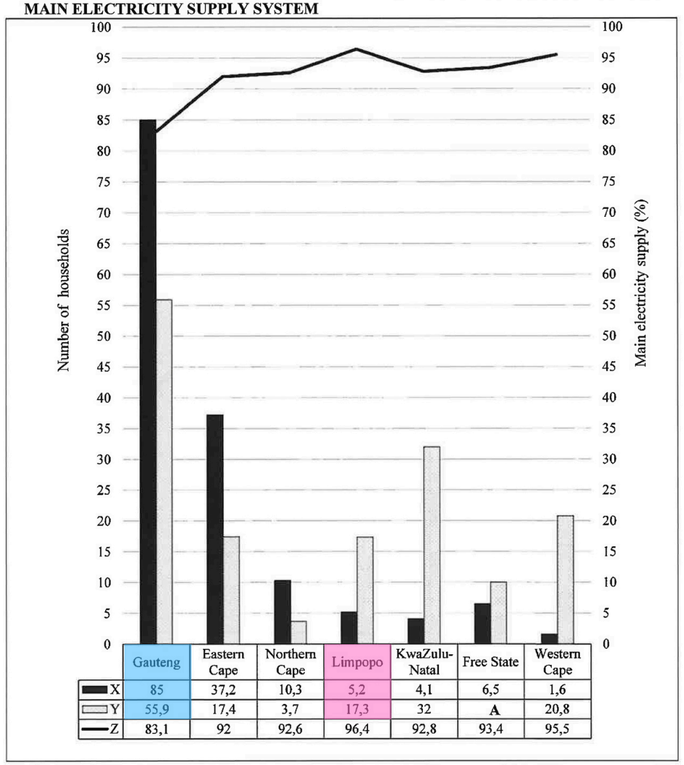
Learners may divide the mean by 9 provinces (instead of 7), since they used that concept in Q3.1.2.

Q3.1. & ANNEXURE A

THE ANSWER SERIES *Your Key to Exam Success*

ANNEXURE A

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Y	55,9	17,4	3,7	17,3	32	A	20,8
Z	83,1	92	92,6	96,4	92,8	93,4	95,5

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3.1.1 Write down the missing table value **A**, the total number of households in the Free State. (2)

3.1.2 State the number of provinces that do NOT provide households with free solar power systems. (2)

COMMENTS

Conceptually – compound bar graphs are used to visually compare data in different categories.

Limpopo

X = no. of households with free solar power ('000)

∴ 5,2 ➜ 5 200 … shorter bar – smaller value ✅

Y = total no. of households ('00 000)

∴ 17,3 ➜ 1 730 000 … taller bar – larger value ✅

Gauteng

X = no. of households with free solar power ('000)

∴ 85 ➜ 85 000 … *taller bar – smaller value?*

Y = total no. of households ('00 000)

∴ 55,9 ➜ 5 590 000 … *shorter bar – larger value?*



QUESTION 3.2.4

THE ANSWER SERIES *Your Key to Exam Success*

TABLE 7 below shows the number of sick leave days taken by permanent and contract employees at different salary scales at the Department of Statistics of South Africa for the period 1 January 2024 to 31 December 2024.

TABLE 7: SICK LEAVE FOR THE PERIOD 1 JANUARY 2024 TO 31 DECEMBER 2024

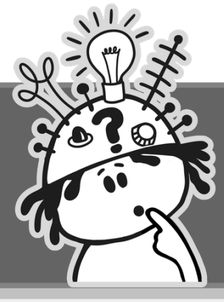
	Salary scale	Total number of days	% of days with medical certificate	Number of employees using sick leave	% of employees using sick leave
Permanent employees	1–2	460	27,4	54	2,4
	3–5	1 649	28,5	169	7,6
	6–8	9 323	24,0	1 067	47,8
	9–12	6 276	23,0	736	33,0
	13–16	1 128	24,2	151	6,8
Contract employees	1–2	9	22,2	4	0,2
	3–5	31	35,5	24	1,1
	6–8	141	19,9	28	1,3
	TOTAL	**19 017**	-	**2 233**	-

[Adapted from www.statssa.gov.za]

3.2.4 Determine, as a percentage, the probability of randomly selecting a permanent employee at salary scale 6–12 using sick leave. (3)

CHALLENGES

Combine 2 salary scales ... wording??



PROPOSED MEMO

P (permanent employee salary scale 6–12 using sick leave)

$$= \frac{\text{permanent salary scale 6–12}}{\text{total } \mathbf{PERMANENT} \text{ employees}} \times 100\%$$

$$= \frac{1\,067 + 736}{54 + 169 + 1\,067 + 736 + 151} \times 100\% = \frac{1\,803}{2\,177} \times 100\% = 82{,}82\%$$

OR

P (permanent employee salary scale 6–12 using sick leave)

$$= \frac{\text{permanent 6–12 salary}}{\mathbf{TOTAL\ EMPLOYEES}} \times 100\%$$

$$= \frac{1\,067 + 736}{\text{permanent + contract}} \times 100\% = \frac{1\,803}{2\,233} \times 100\% = 80{,}74\%$$

ADDITIONAL COMMENTS

- Both answers are justifiable, as the wording is not clear in terms of the required denominator in this probability calculation.
- The word '*scale*' should be plural - thereby implying that more than one salary scale should be used/evaluated when calculating the probability.
- Since the wording '*salary scale 6 - 12*' - singular scale - is used ... and there is no single scale on the table from 6 - 12, it could be argued that the probability = 0.

TABLE 9 & Q4.2.2

THE ANSWER SERIES *Your Key to Exam Success*

Shriyan intends to connect his home to the internet instead of using mobile data. He has the option of choosing a fibre network provider or a 5-G network provider.

TABLE 9 below shows the different network provider options and the amount of data provided with the corresponding monthly costs.

TABLE 9: AMOUNT OF DATA AND COST PER MONTH FOR HOME INTERNET

FIBRE NETWORK PROVIDER	AMOUNT OF DATA	COST	5-G NETWORK PROVIDERS	AMOUNT OF DATA	COST
Vox	Unlimited	**R749**	Axxess	300 GB	**R449**
Webafrica	Unlimited	**R709**	Afrihost Pure	1 TB	**R849**
Afrihost	Unlimited	**R747**	MTN	500 GB	**R619**
Herotel	Unlimited	**R749**	Vodacom	500 GB	**R599**
MTN	Unlimited	**R999**	Rain	1 TB	**R995**

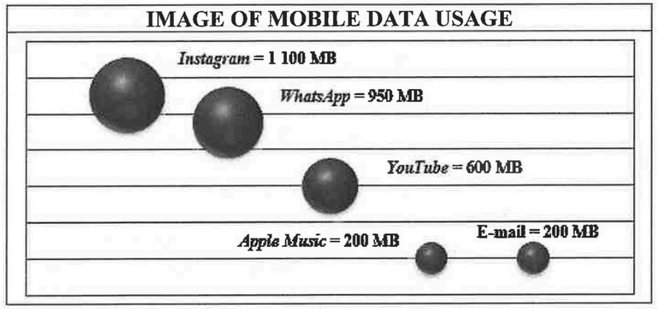
[Adapted from www.businesstech.co.za]

NOTE:
1 terabyte (TB) = 1 000 gigabytes (GB)

$1 \text{ megabyte (MB)} = \frac{1}{1\,000} \text{ gigabytes (GB)}$

The image below illustrates Shriyan's data usage for December 2025.

IMAGE OF MOBILE DATA USAGE



4.2.2 Calculate, in GB, Shriyan's total data usage for December 2025. (4)

COMMENTS

TABLE 9

Read carefully with names & network providers

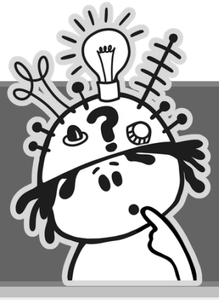
MTN ➜ Fibre network & 5-G network

Afrihost ➜ Fibre & Afrihost Pure ➜ 5-G network



CHALLENGES

Q4.2.2 – Conversion with a fraction



PROPOSED MEMO

Total data usage = 3 050 MB

$1 \text{ MB} : \frac{1}{1\,000} \text{ GB}$ *x 3 050*

$3\,050 \text{ MB} : ?$

$\therefore 3\,050 \text{ MB} \times \frac{1}{1\,000} = 3{,}05 \text{ GB}$

QUESTION 5.1.1 & 5.1.4

THE ANSWER SERIES *Your Key to Exam Success*

TABLE 10 below shows the world's top ten mining companies in 2024, with their country's revenue generated (in billion $) and number of employees.

TABLE 10: WORLD'S TOP 10 BIGGEST MINING COMPANIES IN 2024

NAME OF MINING COMPANY	COUNTRY	REVENUE (IN BILLION $)	NUMBER OF EMPLOYEES
CMOC Group	China	25,68	11 995
Hindalco Industries	India	26,47	40 000
Anglo-American	UK	29,54	100 000
Aluminium Corporation of China	China	32,00	65 000
Zijin Mining Group	China	40,20	40 000
Vale SA	Brazil	42,04	120 000
Rio Tinto	UK	53,96	45 000
BHP Group	Australia	55,22	80 000
Jiangxi Copper	China	73,7	20 000
Glencore	Switzerland	225,97	135 000
TOTAL		–	**656 995**

[Adapted from www.sars.gov.za]

Use the information above to answer the questions that follow.

5.1.1 Write $29,54 billion as a number in full, without using the word 'billions'. (2)

5.1.4 An analyst stated that the revenue per employee for Hindalco Industries is $661 750.

Verify, showing ALL calculations, whether the analyst's statement is CORRECT. (4)

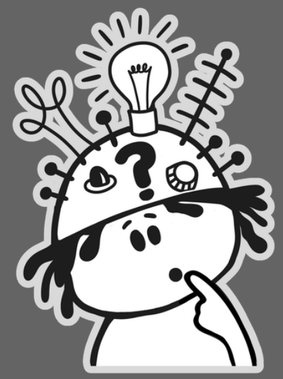
CHALLENGES

Q5.1.1

See 'in Billions' & write out large number

Similar concept as that of **Q2.1.1**

i.e. 3 971 770 in R'000 ➡ 3 971 770 000



Q5.1.4

See 'in Billions', convert to numerical format & calculate rate

PROPOSED MEMO Q5.1.1

$29,54 billion = $29 540 000 000

PROPOSED MEMO Q5.1.4

Revenue per employee for Hindalco Industries

= $26,47 billion ÷ 40 000 employees

= $26 470 000 000 ÷ 40 000 employees

= $661 750 per employee

∴ Statement is **CORRECT**.

COMMENTS

3rd time testing Billions!



QUESTION 5.2.1

THE ANSWER SERIES *Your Key to Exam Success*

Amali is a new employee at Nakuru mine in Kenya. She was offered a monthly taxable income of 125 000 Kenyan shilling (KES) by her employer.

In Kenya, personal income tax is calculated on an individual's monthly taxable income.

TABLE 11 below shows the personal monthly income levels and tax rates used in Kenya.

TABLE 11: PERSONAL MONTHLY INCOME LEVELS AND TAX RATES USED IN KENYA

	MONTHLY INCOME LEVELS (in KES)	TAX RATES
On the first	0–24 000	10%
On the next	24 001–32 333	25%
On the next	32 334–500 000	30%
On the next	500 001–800 000	32,5%
On all income above	800 000	35%

TAX REBATE
KES 2 400

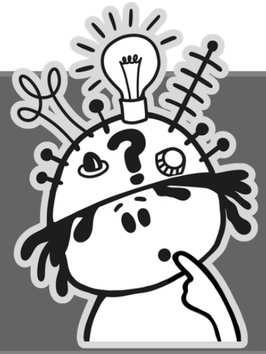
[Adapted from www.ieakenya.or.ke]

Use the information above to answer the questions that follow.

5.2.1 Show that a person earning KES23 000 per month will NOT pay any personal income tax. (3)

CHALLENGES

Tax + a rebate + **foreign tax table** + **foreign currency**



PROPOSED MEMO

$$\text{Tax} = \frac{10}{100} \times \text{KES } 23\,000$$

$$= \text{KES } 2\,300$$

Tax due = tax – rebate

= KES 2 300 – KES 2 400

= – KES 100

∴ Amali will **NOT** pay tax.

ADDITIONAL COMMENTS

There is a difference between taxable income and monthly income.
However, the wording in this question uses them interchangeably.
i.e. The question says that '*personal income tax is calculated on an individual's monthly taxable income*'. However, the table refers to '*monthly income*'.

QUESTION 5.2.2

THE ANSWER SERIES *Your Key to Exam Success*

Amali is a new employee at Nakuru mine in Kenya. She was offered a monthly taxable income of 125 000 Kenyan shilling (KES) by her employer.

In Kenya, personal income tax is calculated on an individual's monthly taxable income.

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On all income above	800 000	35%
TAX REBATE		
KES 2 400		

[Adapted from www.ieakenya.or.ke]

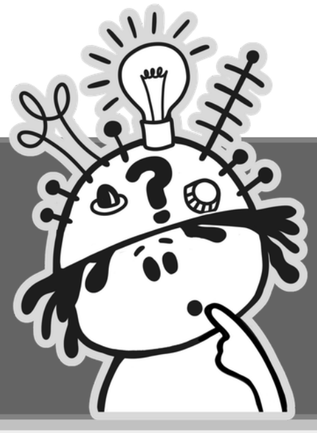
5.2.2 Amali decided to invest 5,5% of one month's taxable income for a period of 1 year and 10 months.

A bank in Kenya offered her an interest rate of 7,76% p.a. for the first year and 7,73% p.a. for the second year, compounded annually.

Calculate the total value of the investment at the end of the given period. (8)

CHALLENGES

% investment + compound interest + 2 different interest rates + 2 different time periods + fraction of a year + **foreign currency**



PROPOSED MEMO

$$\text{Investment} = \frac{5{,}5}{100} \times \text{KES } 23\,000$$
$$= \text{KES } 6\,875$$

$$\text{Interest Year 1} = \frac{7{,}76}{100} \times \text{KES } 6\,875$$
$$= \text{KES } 533{,}50$$

$$\text{Value after Year 1} = \text{KES } 6\,875 + \text{KES } 533{,}50$$
$$= \text{KES } 7\,408{,}50$$

(continued)

QUESTION 5.2.2

THE ANSWER SERIES *Your Key to Exam Success*

Amali is a new employee at Nakuru mine in Kenya. She was offered a monthly taxable income of 125 000 Kenyan shilling (KES) by her employer.

In Kenya, personal income tax is calculated on an individual's monthly taxable income.

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On all income above	800 000	35%
TAX REBATE		
KES 2 400		

[Adapted from www.ieakenya.or.ke]

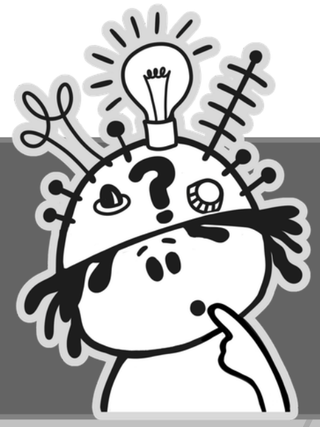
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Calculate the total value of the investment at the end of the given period. (8)

CHALLENGES

% investment + compound interest + 2 different interest rates + 2 different time periods + fraction of a year + **foreign currency**



PROPOSED MEMO ...(continued)...

Interest for 10 months in Year 2

$$= \frac{7,73}{100} \times \frac{10}{12} \times \text{KES } 7\,408,50$$

$$= \frac{6,441666667}{100} \times \text{KES } 7\,408,50$$

$$= \text{KES } 477,23$$

Value at end of period

= KES 7 408,50 + KES 477,23

= KES 7 885,73

ADDITIONAL COMMENTS

Educators must teach the different time periods (i.e. fractions of a year) for both simple and compound interest.

QUESTION 5.3

THE ANSWER SERIES *Your Key to Exam Success*

The employer at Nakuru mine in Kenya offers her the following:

- Free accommodation
- 60% payment of her monthly water bill

NOTE: Amali is responsible for settling the remaining amount of the monthly water bill.

Kenya uses a stepped tariff system known as blocks to calculate water consumption in cubic metres (m^3).

TABLE 12 below shows a standard domestic stepped tariff structure (in m^3) used in Kenya.

TABLE 12: STANDARD DOMESTIC STEPPED TARIFF STRUCTURE IN KENYA

BLOCK	CONSUMPTION (m^3)	APPROVED TARIFF (KES) per m^3
1	From 0 to 6	68
2	More than 6 to 20	85
3	More than 20 to 50	91
4	More than 50 to 100	101
5	More than 100 to 300	109
6	More than 300	117

[Adapted from www.nairobiwater.or.ke]

Use the information above to answer the question that follows.

Calculate Amali's contribution towards her monthly water bill if she used 22 m^3 of water in a specific month.

CHALLENGES

Stepped water tariff + part payment + **foreign currency**



PROPOSED MEMO

Block 1: From 0 – 6 m^3 ➡ 6 m^3 @ KES 68/m^3

∴ Cost = 6 m^3 x KES 68 = KES 408

Block 2: From 6 – 20 m^3 ➡ 14 m^3 @ KES 85/m^3

∴ Cost = 14 m^3 x KES 85 = KES 1 190

Block 3: From 20 – 50 m^3 ➡ **2** m^3 @ KES 91/m^3

∴ Cost = **2** m^3 x KES 91 = KES 182

(continued)

ADDITIONAL COMMENTS

- Learners where exposed to m^3 as opposed to kℓ for this water tariff question. Since there was no conversion necessary, it shouldn't have affected the calculations. However, it may have thrown learners off who usually work with kℓ for water tariffs.
- There was a m^3 to ℓ conversion in Paper 2, so was this necessary to use m3 here as well?
- Tariffs were emphasized in Paper 1 ... cellphone tariffs in Q4 and now again water tariffs in Q5, together with a foreign, unfamiliar element. Other financial aspects could possibly have been tested?

QUESTION 5.3

THE ANSWER SERIES *Your Key to Exam Success*

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- Free accommodation
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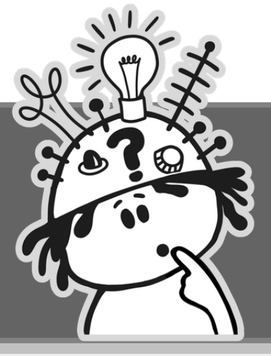
[Adapted from www.nairobiwater.or.ke]

Use the information above to answer the question that follows.

Calculate Amali's contribution towards her monthly water bill if she used 22 m^3 of water in a specific month. (7)

CHALLENGES

Stepped water tariff + part payment + **foreign currency**



PROPOSED MEMO ...(continued)...

Total water cost

= KES 408 + KES 1 190 + KES 182

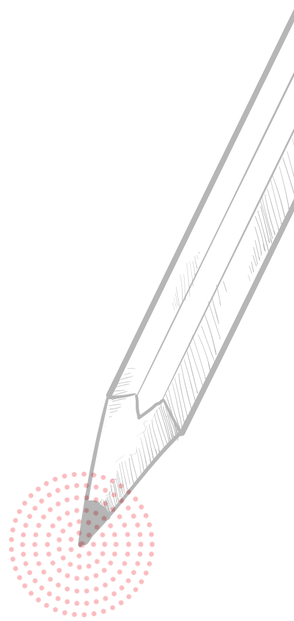
= KES 1 780

Nakura Mine pays 60% ∴ Amali pays 40%

∴ Amali's contribution

$= \frac{40}{100} \times$ KES 1 780

= KES 712



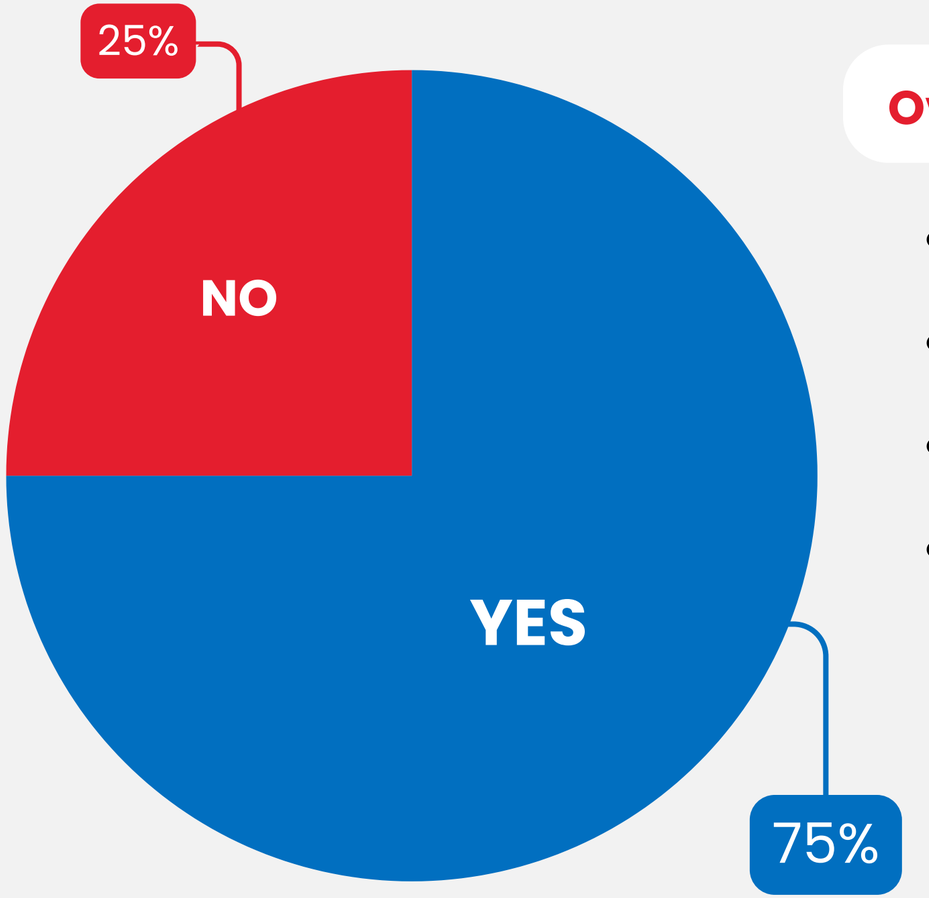
2026 NSC Maths Literacy
PAPER 2 REVIEW



CHALLENGING QUESTIONS

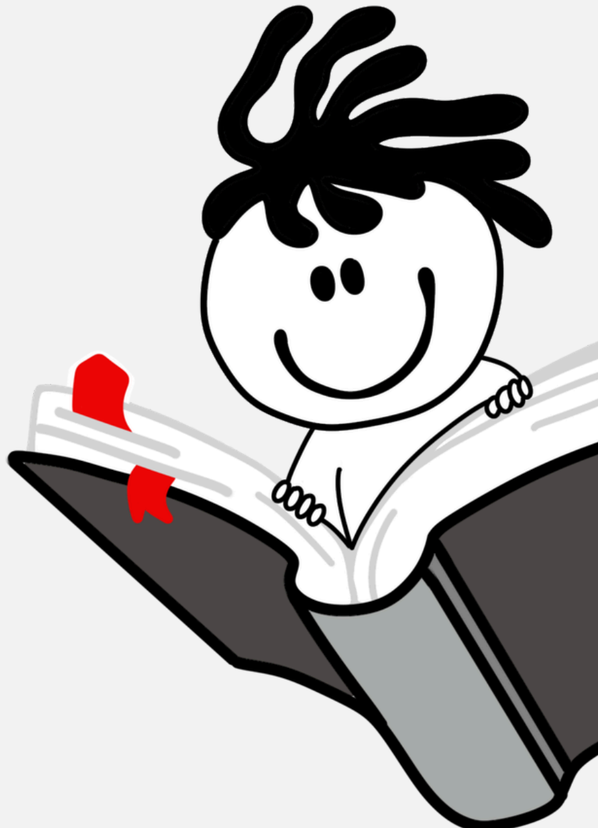


PAPER 2 OVERVIEW: Language

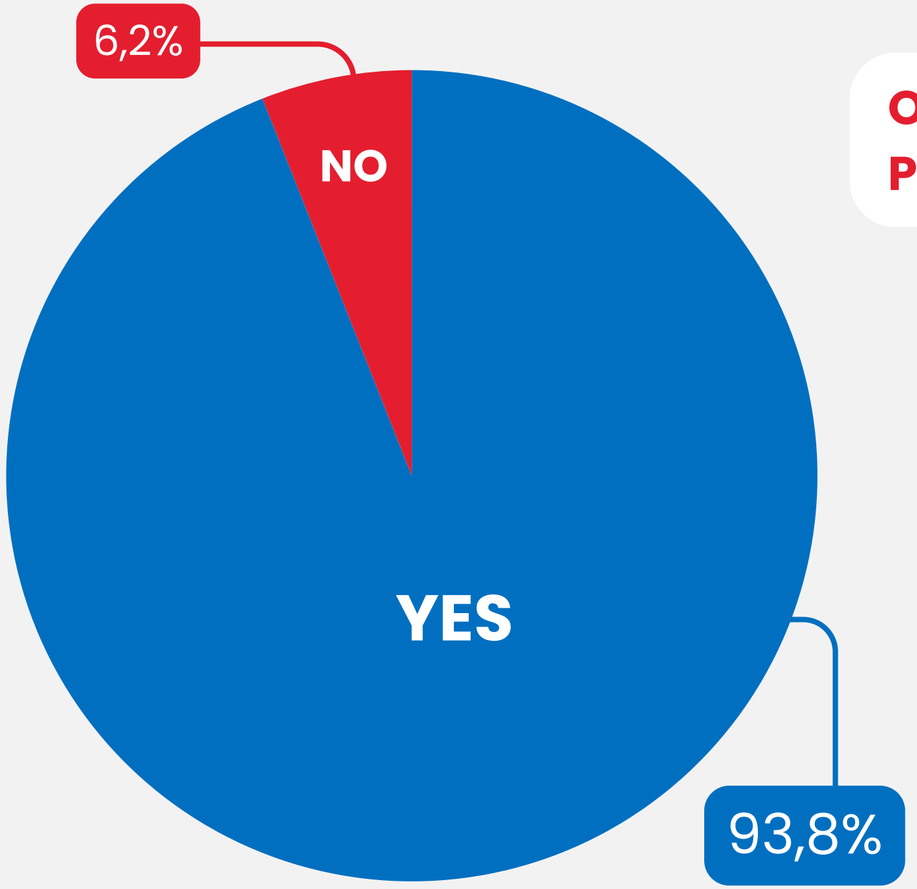


Overall, did the LANGUAGE in Paper 2 reflect wording that is:

- accessible to all learners.
- clear, direct and easy-to-follow.
- *not* ambiguous in interpretation.
- understood by learners in terms of what the question asked them to do.



PAPER 2 OVERVIEW: Diagrams, Tables & Images

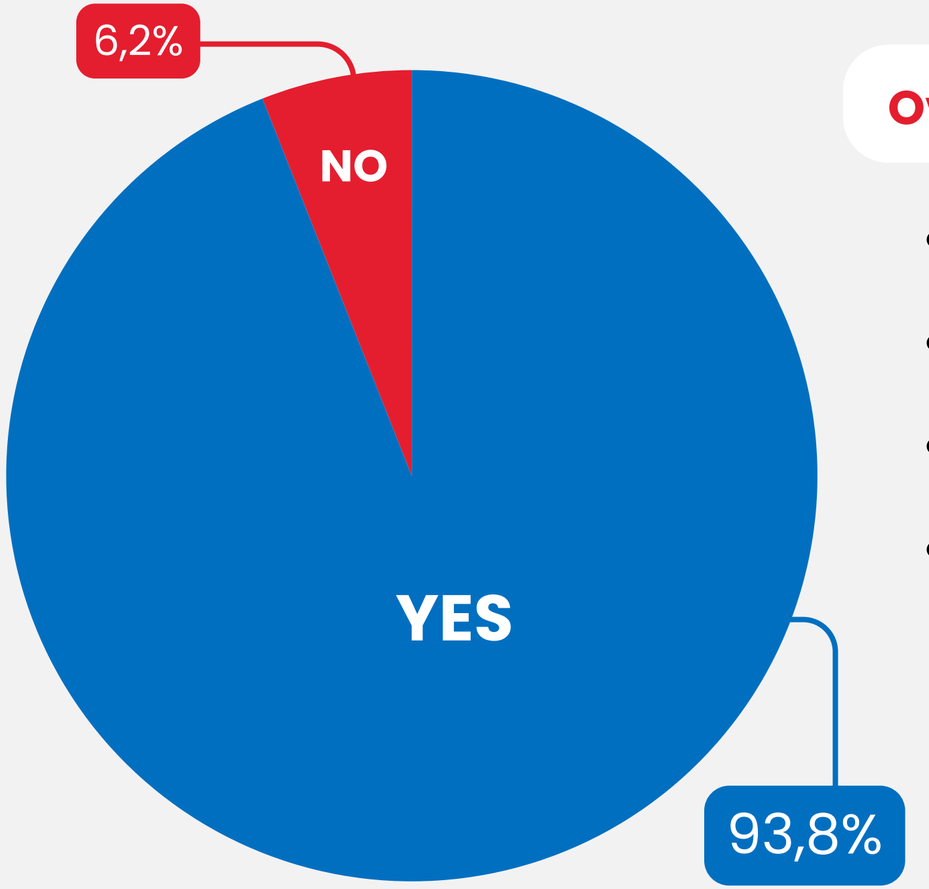


Overall, did the DIAGRAMS, TABLES & IMAGES in Paper 2 reflect the fact that they were:

- clear, well-labelled and easy-to-read.
- large enough for learners to identify the important elements/symbols/text.
- well-constructed in terms of showing the relevant data/information.

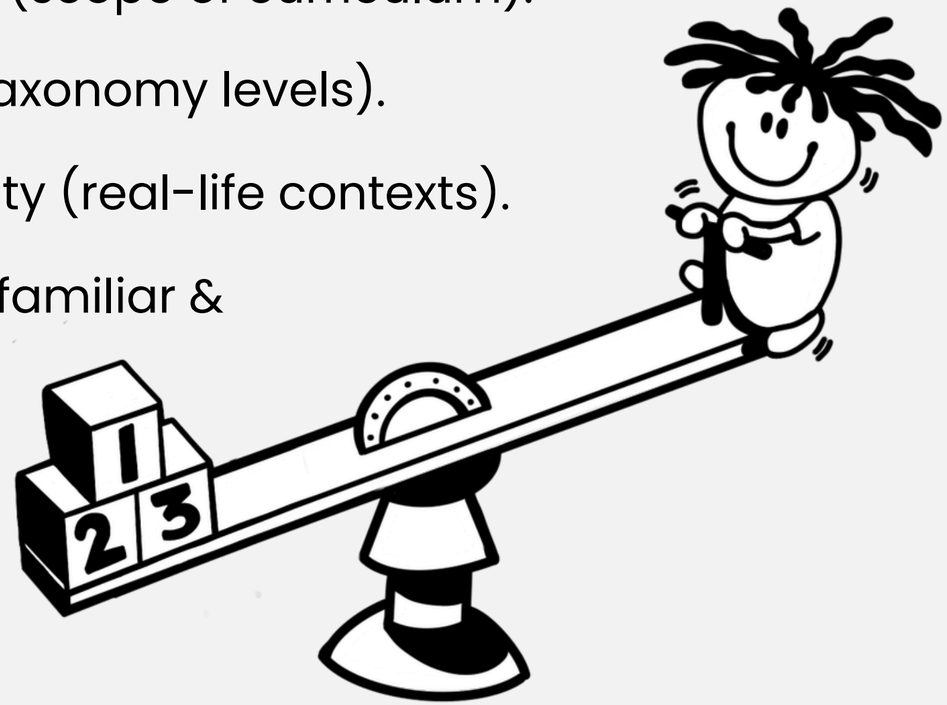


PAPER 2 OVERVIEW: Balance

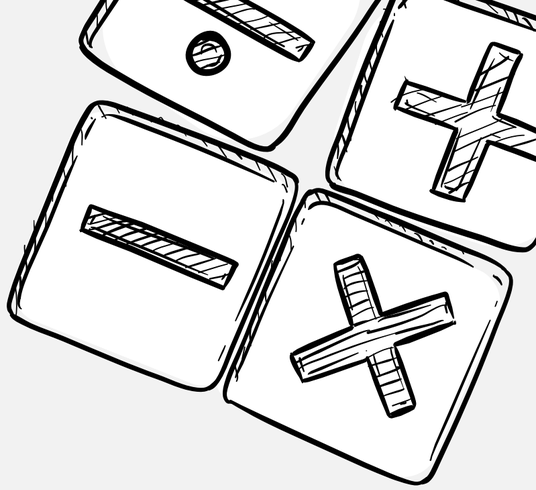


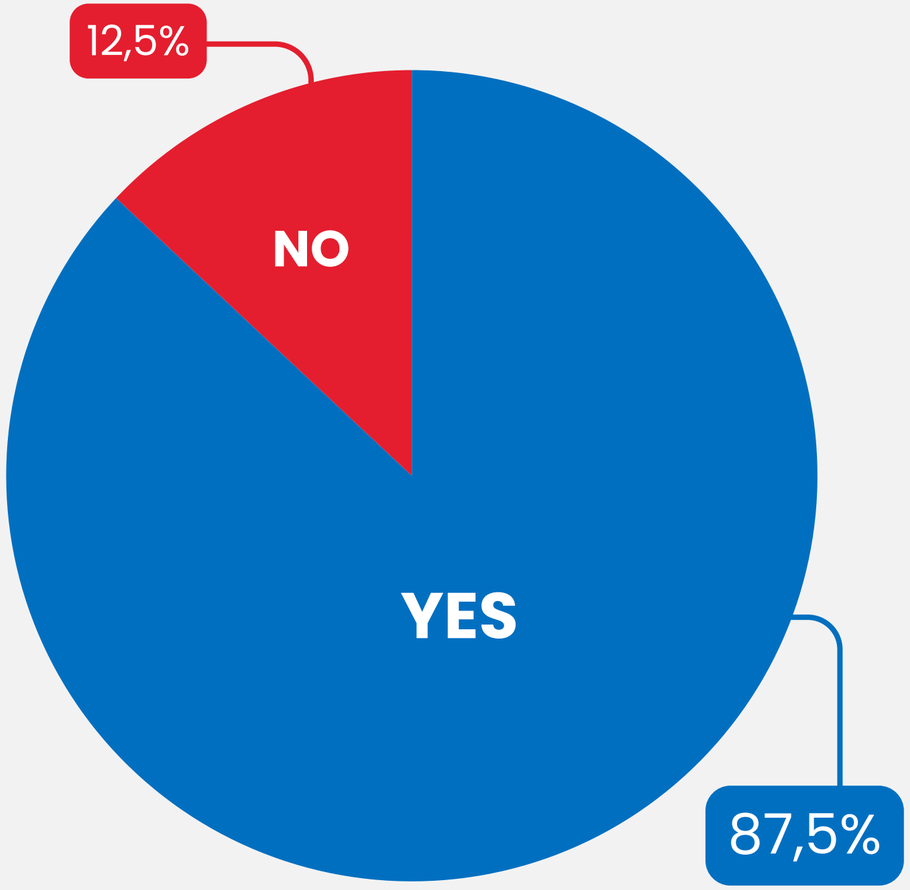
Overall, was Paper 2 BALANCED in terms of:

- curriculum coverage (scope of curriculum).
- cognitive demand (taxonomy levels).
- contextual authenticity (real-life contexts).
- contextual diversity (familiar & unfamiliar contexts).



PAPER 2 OVERVIEW: Fairness





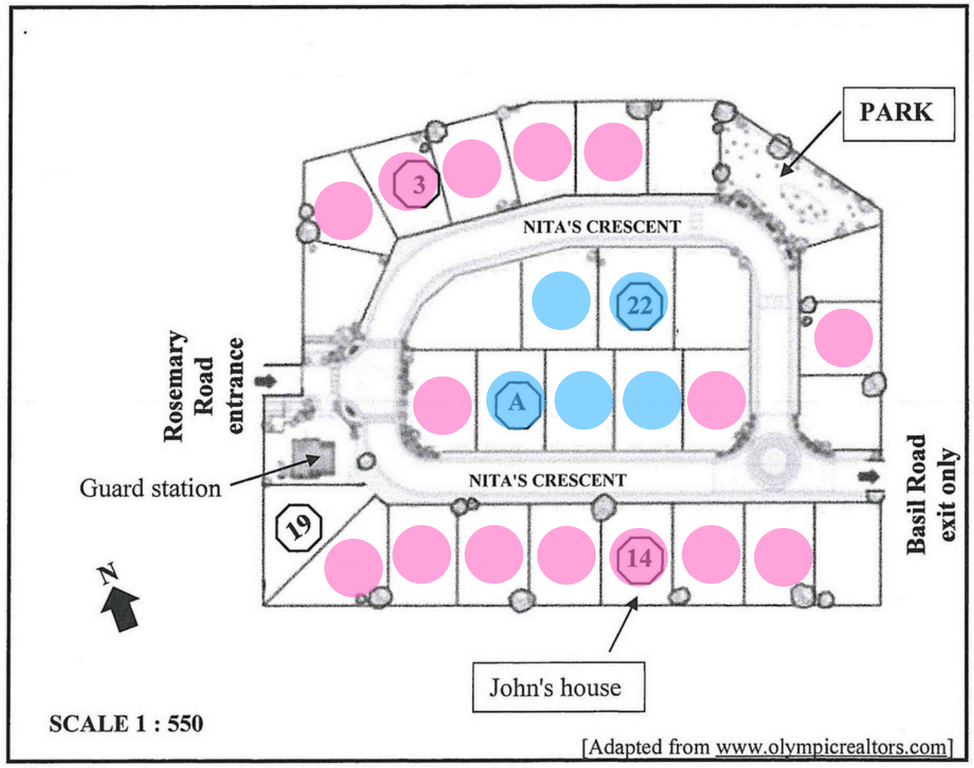
Overall, was Paper 2 FAIR, in terms of giving learners the opportunity to showcase their knowledge, skills, understanding and critical thinking?



QUESTION 2.1.4

THE ANSWER SERIES *Your Key to Exam Success*

LAYOUT PLAN FOR THE BELLA DONNA HOUSING COMPLEX



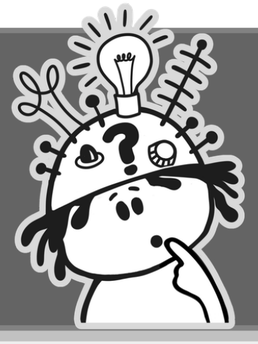
[Adapted from www.olympicrealtors.com]

2.1.4 John stated that the simplified ratio of the houses that are bordered by 4 houses, to those bordered by 2 houses, is 1 : 3.

Show, by means of calculation, whether he is CORRECT. (5)

CHALLENGES

- Language barrier
- Time consuming → wasted time & still possibly not even get a mark or two



PROPOSED MEMO

Houses bordered by 4 houses	:	Houses bordered by 2 houses
5	:	15
1	:	3

∴ John is **CORRECT**.

ADDITIONAL COMMENTS Q 2.1.3

Learners may battle with the numbering system, since the wording is unclear.
Note: Q2.1.3 (a) TRUE.
Then Q2.1.3 (b) A = 27.
However, if Q2.1.3 (a) is answered as FALSE, then Q2.1.3 (b) A = 26. (CA mark).

ADDITIONAL COMMENTS

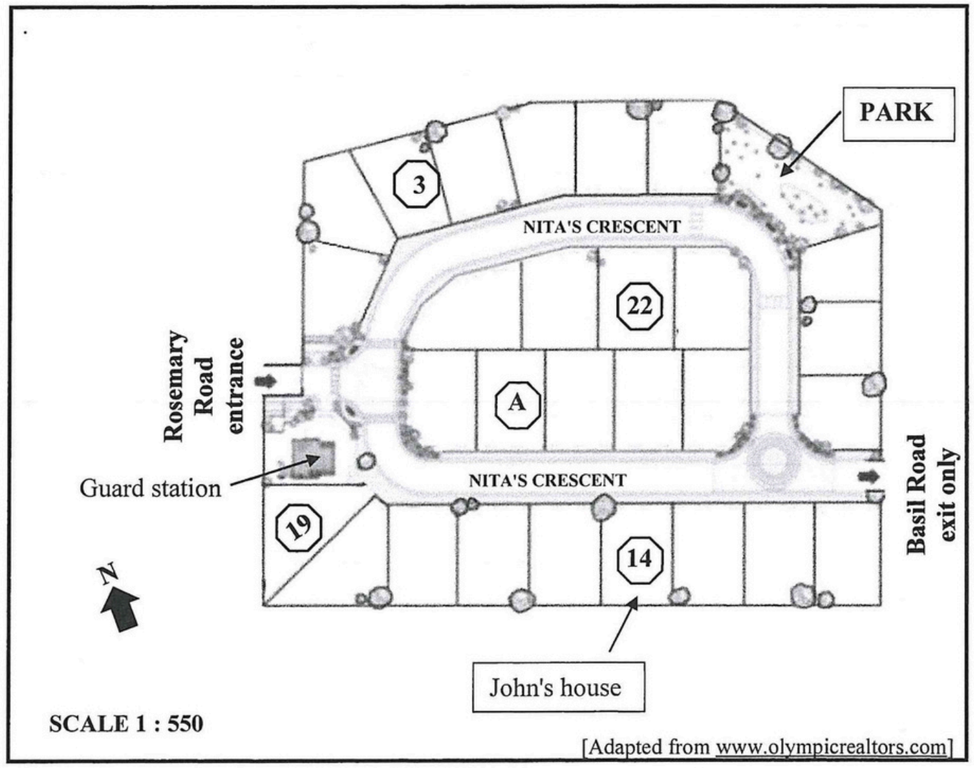
This question was considered unfair for the following reasons:

- The wording was very ambiguous.
- Learners might not know what '*bordered*' is.
- There is no NOTE explaining what constitutes a '*bordered*' house.
- Learners in rural areas might not have houses '*bordered*' by other houses.
- The diagram was unclear in terms of the borders/boundary lines for the houses bordered by 4 houses.

QUESTION 2.1.5

THE ANSWER SERIES *Your Key to Exam Success*

LAYOUT PLAN FOR THE BELLA DONNA HOUSING COMPLEX



SCALE 1 : 550

[Adapted from www.olympicrealtors.com]

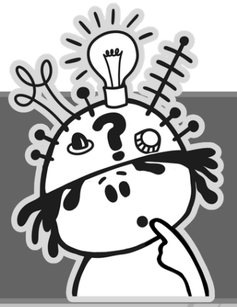
2.1.5 The owner of house number **19** wants to replace the fencing around the border of his house, excluding the entrance to Nita's Crescent.

Use measurements and the given scale to determine, in metres, the actual length of fencing required.

NOTE: Fencing is sold per running metre. (6)

CHALLENGES

Scale conversion



PROPOSED MEMO

OPTION 1

Length of border of #19
= 19 mm + 25 mm + 16 mm
= 60 mm

∴ Length in reality = 60 mm x 550
= 33 000 mm

∴ Length of fencing = 33 000 mm ÷ 1 000
= 33 m

(continued)

ADDITIONAL COMMENTS

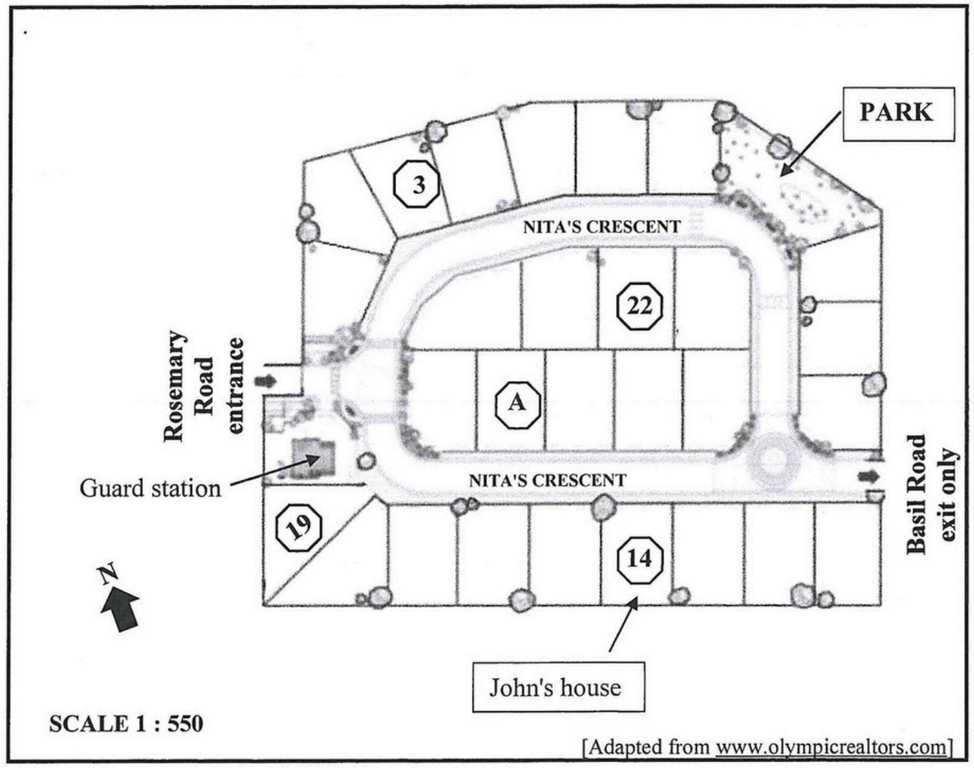
There are going to be many variations on the answers, due to the following:

- 1 mm allowance PER measurement of the boundary walls (x3 in total)
- Learners may first convert each measurement (x3) into metres, before using the scale to determine the actual length.
- Rounding off throughout the calculation.

QUESTION 2.1.5

THE ANSWER SERIES *Your Key to Exam Success*

LAYOUT PLAN FOR THE BELLA DONNA HOUSING COMPLEX



SCALE 1 : 550

[Adapted from www.olympicrealtors.com]

2.1.5 The owner of house number **19** wants to replace the fencing around the border of his house, excluding the entrance to Nita's Crescent.

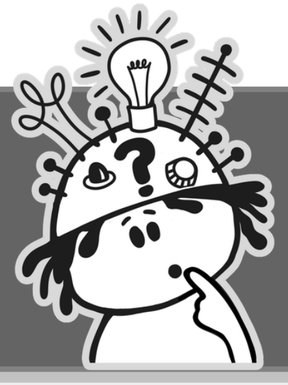
Use measurements and the given scale to determine, in metres, the actual length of fencing required.

NOTE: Fencing is sold per running metre. (6)

CHALLENGES

Scale conversion

Rounding up for 'running metre'



PROPOSED MEMO OPTION 2

Length of border of #19

= **20** mm + 25 mm + 16 mm

= **61** mm

∴ Length in reality = 61 mm x 550

= 33 550 mm

∴ Length of fencing = 33 550 mm ÷ 1 000

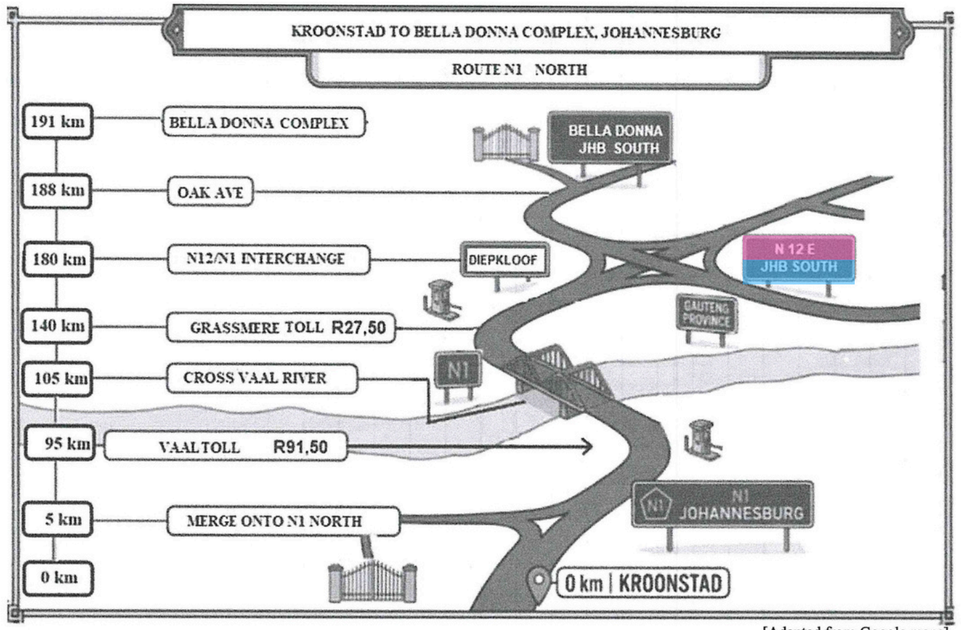
= 33,55 m

≈ **34** m

QUESTION 2.2.3

THE ANSWER SERIES *Your Key to Exam Success*

ANNEXURE B: STRIP MAP OF ROUTE FROM KROONSTAD TO BELLA DONNA COMPLEX



[Adapted from Google maps]

2.2.3 Lerona travels in the opposite direction to the signboard marked N12 E.

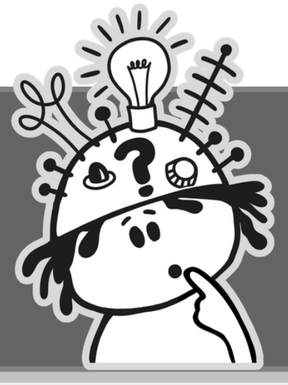
Give the compass direction in which she will be traveling now. (2)

ADDITIONAL COMMENTS

Since Lerona is travelling in a south-easterly direction, learners could give the opposite direction as north west?

CHALLENGES

Reading the signboard correctly



PROPOSED MEMO

N 12 **E**

E =east

∴ Opposite direction : W = west

COMMENTS

The board also says JHB **SOUTH**

∴ Opposite direction = north?

Would learners interpret **N** in **N 12 E** as North (as opposed to National)?

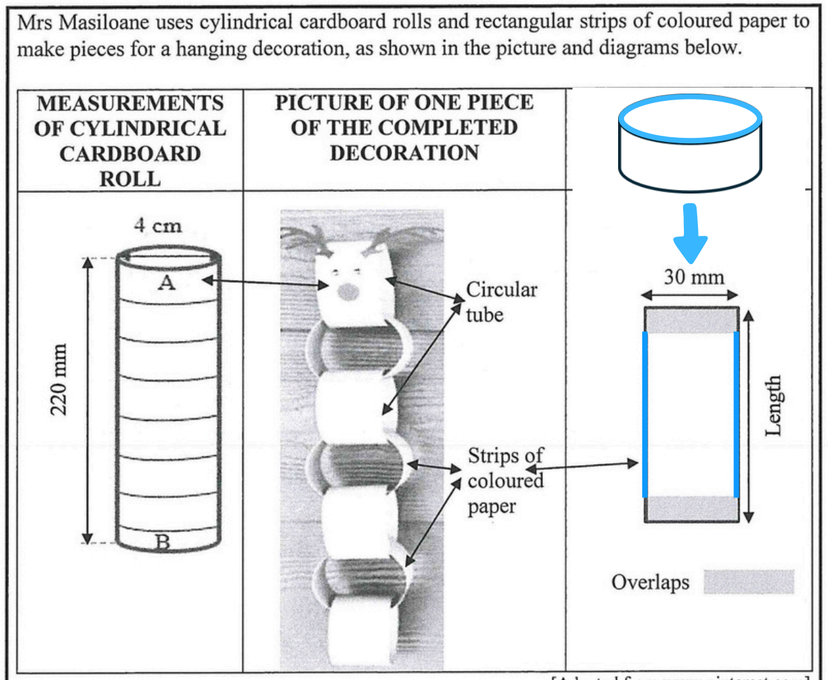
∴ Opposite direction = south?



QUESTION 3.1.2

THE ANSWER SERIES *Your Key to Exam Success*

Mrs Masiloane uses cylindrical cardboard rolls and rectangular strips of coloured paper to make pieces for a hanging decoration, as shown in the picture and diagrams below.



[Adapted from www.pinterest.com]

NOTE:

- The circular tubes **A**, with equal heights, are cut from cylindrical cardboard rolls.
- The circles binding them together are strips cut from coloured paper with the ends glued together.
- Circular tube **B** is the unused cut-off piece.
- The strips of coloured paper are glued to form a circle with a circumference of 130 mm, excluding 5 mm overlaps on both ends for the glue.

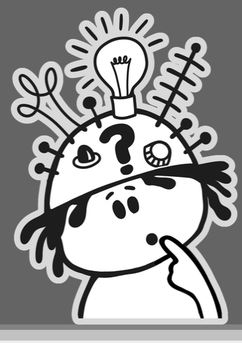
3.1.2 Calculate, in cm, the perimeter of a rectangular coloured paper strip.

You may use the following formula: **Perimeter = 2(Length + Width)** (5)

CHALLENGES

Connect concept of **CIRCUMFERENCE** of paper strip with **LENGTH**of paper + factor in **2x glue overlaps**

Abstract concept ➡ perhaps diagram included?



PROPOSED MEMO

Total length of 1 side of paper strip
= 5 mm + 130 mm + 5 mm
= 140 mm

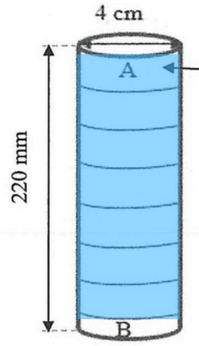
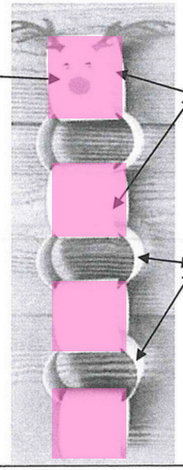
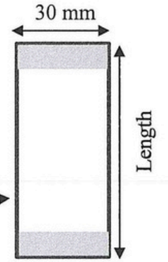
Perimeter = 2(Length + Width)
= 2(140 + 30 mm)
= 340 mm

∴ Perimeter = 340 mm ÷ 10 = 34 cm

QUESTION 3.1.3

THE ANSWER SERIES *Your Key to Exam Success*

Mrs Masiloane uses cylindrical cardboard rolls and rectangular strips of coloured paper to make pieces for a hanging decoration, as shown in the picture and diagrams below.

MEASUREMENTS OF CYLINDRICAL CARDBOARD ROLL	PICTURE OF ONE PIECE OF THE COMPLETED DECORATION	MEASUREMENTS OF THE RECTANGULAR STRIP OF COLOURED PAPER
		

[Adapted from www.pinterest.com]

NOTE:

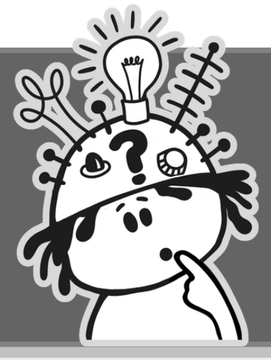
- The circular tubes **A**, with equal heights, are cut from cylindrical cardboard rolls.
- The circles binding them together are strips cut from coloured paper with the ends glued together.
- Circular tube **B** is the unused cut-off piece.
- The strips of coloured paper are glued to form a circle with a circumference of 130 mm, excluding 5 mm overlaps on both ends for the glue.

3.1.3 Mrs Masiloane is going to make 68 complete pieces of decorations.

She states that she will need fewer than 40 cardboard rolls to have enough circular tubes to complete ALL the decorations.

Verify, showing ALL calculations, if her statement is VALID. (5)

CHALLENGES



Find the link between cardboard rolls & complete decoration

Wording issue?

PROPOSED MEMO

1 complete decoration needs 4 tubes

∴ 68 decorations needs 68 x 4 tubes = 272 tubes

1 cardboard roll makes 7 tubes *[From Q3.1.1]*

∴ No. of cardboard rolls for 68 decorations

= 272 tubes ÷ 7

= 38,85

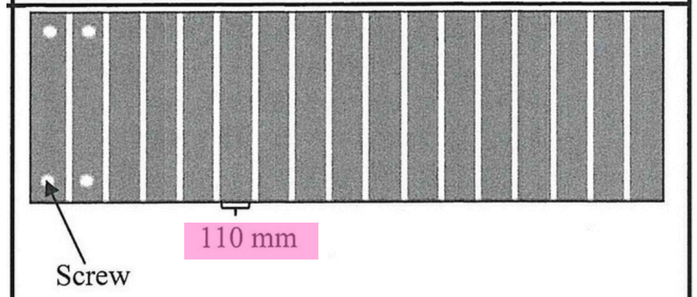
≈ 39 rolls

∴ Mrs Masiloane's statement is **VALID** (<40 rolls).

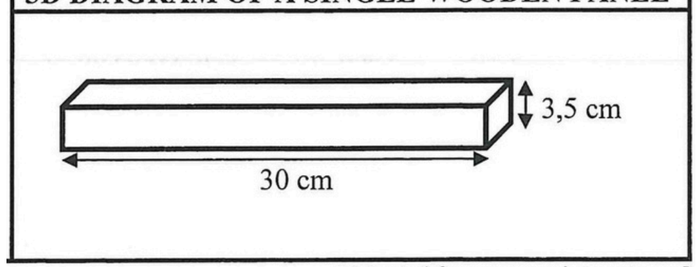
QUESTION 3.2.3

THE ANSWER SERIES *Your Key to Exam Success*

COMPLETED DIAGRAM OF TOP OF BENCH



3D DIAGRAM OF A SINGLE WOODEN PANEL



[Adapted from www.pinterest.com]

3.2.3 Musa decides to paint each wooden panel with three coats of paint on ALL sides. The spread rate, per coat, of the paint is 11 m^2 per litre.

Musa states that he will need only half a tin of the 500 mℓ paint to complete the painting of ALL the wooden panels.

Verify, with calculations (in cm), whether his statement is VALID.

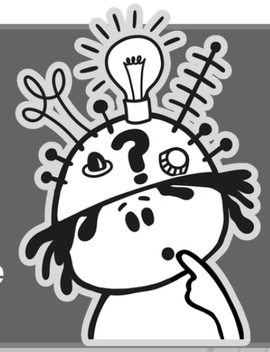
You may use the following formula:

Total surface area of rectangular prism = $2(\ell \times w) + 2(\ell \times h) + 2(w \times h)$
where ℓ = length, w = width and h = height (9)

CHALLENGES

Multistep with 9 mark allocation

Wording confusing:
Units 'with calculations (in cm)' ... but 11 m^2 per litre



PROPOSED MEMO

Width of panel = 110 mm ÷ 10 = 11 cm

TSA of 1 panel
= $2(\ell \times w) + 2(\ell \times h) + 2(w \times h)$
= $2(30\text{ cm} \times 11\text{ cm}) + 2(30\text{ cm} \times 3{,}5\text{ cm}) + 2(11\text{ cm} \times 3{,}5\text{ cm})$
= $660\text{ cm}^2 + 210\text{ cm}^2 + 77\text{ cm}^2$
= 947 cm^2

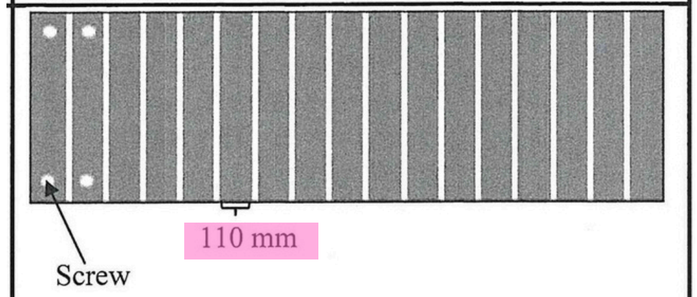
∴ TSA of 17 panels = $947\text{ cm}^2 \times 17$
= $16\,099\text{ cm}^2$

(continued)

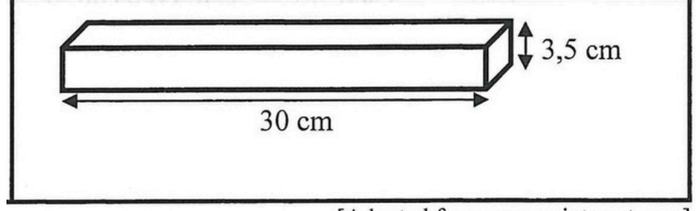
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THE ANSWER SERIES *Your Key to Exam Success*

COMPLETED DIAGRAM OF TOP OF BENCH



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Musa states that he will need only half a tin of the 500 mℓ paint to complete the painting of ALL the wooden panels.

Verify, with calculations (in cm), whether his statement is VALID.

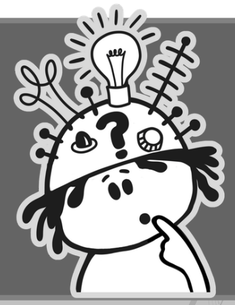
You may use the following formula:

Total surface area of rectangular prism = $2(\ell \times w) + 2(\ell \times h) + 2(w \times h)$
where ℓ = length, w = width and h = height (9)

CHALLENGES

Multistep with 9 mark allocation

Wording confusing:
Units 'with calculations (in **cm**)' ... but 11 **m^2** per litre



PROPOSED MEMO ...(continued)...

∴ TSA for 3 coats of paint = 16 099 cm^2 x 3 = 48 297 cm^2

Spread rate: 11 m^2 per litre
11 m^2 = 11 x $(100)^2$ = 110 000 cm^2

∴ No. of litres of paint = $\frac{48\ 297\ cm^2}{110\ 000\ cm^2}$ = 0,439063 ℓ

∴ Volume of paint needed = 0,439063 ℓ x 1 000 = 439,06 mℓ

Half tin of paint = ½ x 500 mℓ = 250 mℓ

∴ Musa's statement is **INVALID** (>250 mℓ).

ADDITIONAL COMMENTS

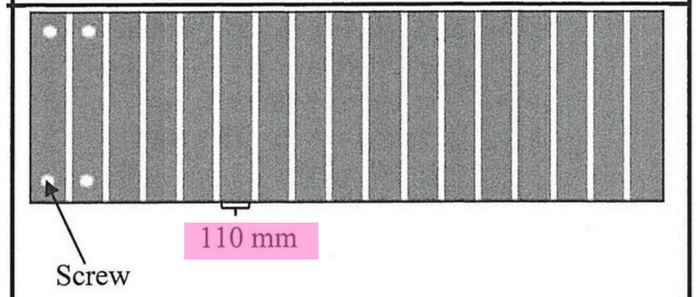
Many reviewers believe that this question justifies more marks. Should the maximum number of marks per question be capped, then a suggestion would be to scaffold this question into first calculating the TSA and then working with the spread rate and volume.

(continued)

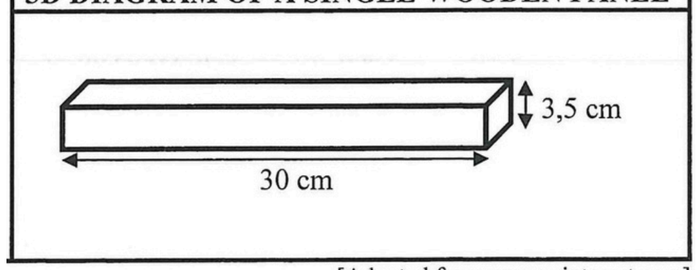
QUESTION 3.2.3

THE ANSWER SERIES *Your Key to Exam Success*

COMPLETED DIAGRAM OF TOP OF BENCH



3D DIAGRAM OF A SINGLE WOODEN PANEL



[Adapted from www.pinterest.com]

3.2.3 Musa decides to paint each wooden panel with three coats of paint on ALL sides. The spread rate, per coat, of the paint is 11 m^2 per litre.

Musa states that he will need only half a tin of the 500 mℓ paint to complete the painting of ALL the wooden panels.

Verify, with calculations (in cm), whether his statement is VALID.

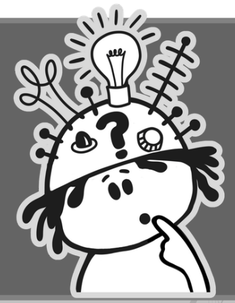
You may use the following formula:

Total surface area of rectangular prism = $2(\ell \times w) + 2(\ell \times h) + 2(w \times h)$
where ℓ = length, w = width and h = height (9)

CHALLENGES

Multistep with 9 mark allocation

Wording confusing:
Units 'with calculations (in **cm**)' ... but 11 **m^2** per litre



PROPOSED MEMO ...(continued)...

∴ TSA for 3 coats of paint = 16 099 cm^2 x 3 = 48 297 cm^2

Spread rate: 11 m^2 per litre
11 m^2 = 11 x $(100)^2$ = 110 000 cm^2

∴ No. of litres of paint = $\frac{48\ 297\ cm^2}{110\ 000\ cm^2}$ = 0,439063 ℓ

∴ Volume of paint needed = 0,439063 ℓ x 1 000 = 439,06 mℓ

Half tin of paint = ½ x 500 mℓ = 250 mℓ

∴ Musa's statement is **INVALID** (>250 mℓ).

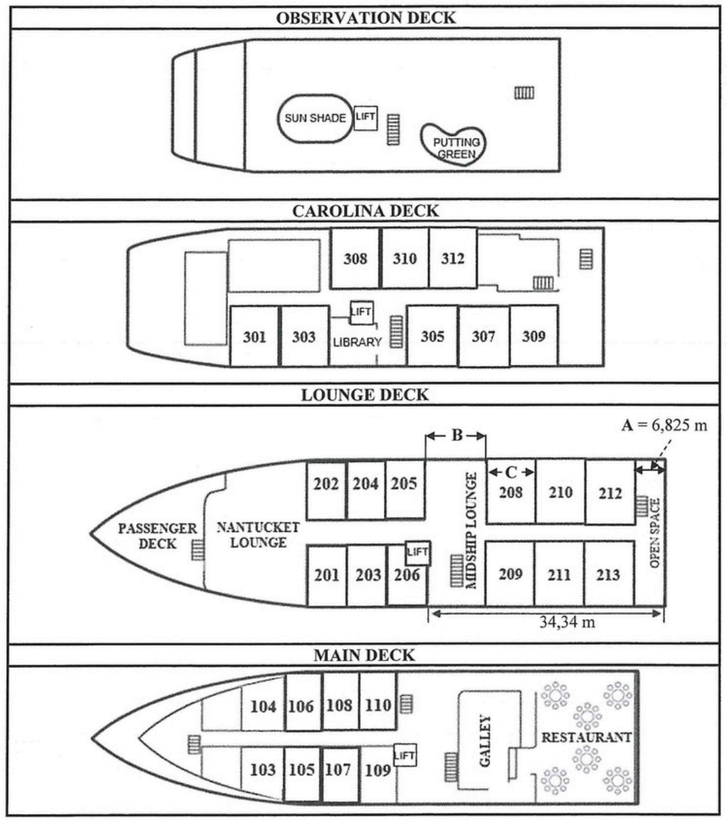
ADDITIONAL COMMENTS

Some learners may calculate the spread rate in terms of the available ½ tin of paint, i.e. 11 m^2/ℓ = 2,75 m^2/250 mℓ. Thereafter, they would need to convert the TSA in cm^2 to m^2 and then evaluate the TSA with the new calculated spread.

QUESTION 4.1.2

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ANNEXURE C: LAYOUT PLAN OF A CRUISE SHIP



106–110	Stateroom with window
201–206	Stateroom with window
208–213	Stateroom with balcony
LIFT	Lift

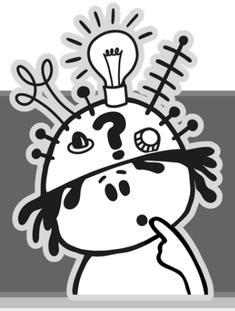
103–105	Single room with window
301–312	Stateroom with balcony
	Stairs
	Tables and chairs

[Adapted from smallcruiseadventures.com]

4.1.2 There are 28 staterooms on the ship. Express the number of staterooms with a window as a decimal, rounded to the nearest $\frac{1}{1\,000}$ of the total number of staterooms. (4)

CHALLENGES

Rounding off to $\frac{1}{1\,000}$ → 3 d.p.



PROPOSED MEMO

P(staterooms with windows)

$= \frac{5 + 6}{28}$

106 - 110: 5 rooms
201 - 206: 6 rooms

$= \frac{11}{28} = 0{,}392857 \approx 0{,}393$

COMMENTS

Number of staterooms doesn't = 28

- either visually (rooms missing, e.g. 302, 304, 308, etc.) OR
- if you add them up using room numbers on key (5 + 6 + 6 + 12 = 29 rooms)



QUESTION 4.1.2

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ADDITIONAL COMMENTS

The diagram and representation of the staterooms is misleading.

- If you count the number of visible rooms on the plan, you get 28 rooms.
- However, of those 28 countable rooms, 3 of those rooms are labelled in the key as '*103–105: single room with window*.'
- By the distinction in the wording on the key – there is a difference between a stateroom with a window and a single room with a window.
- In the NOTE section, they say that '*A stateroom is a bedroom designed to look like a hotel room on a ship*'. Therefore, by this definition, are they alluding to the fact that a stateroom and a single are the same?
- If so, then the probability of a stateroom with a window (= single room with a window) = $\frac{5 + 6 + 3}{28} = \frac{14}{28} = 0{,}5$

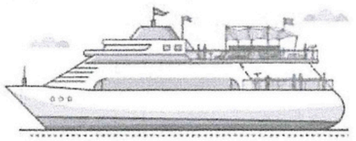
∴ Wording is terribly confusing and does not match the visual representation.

ANNEXURE C in the ANSWER BOOK shows a layout plan of a small cruise ship with four decks.

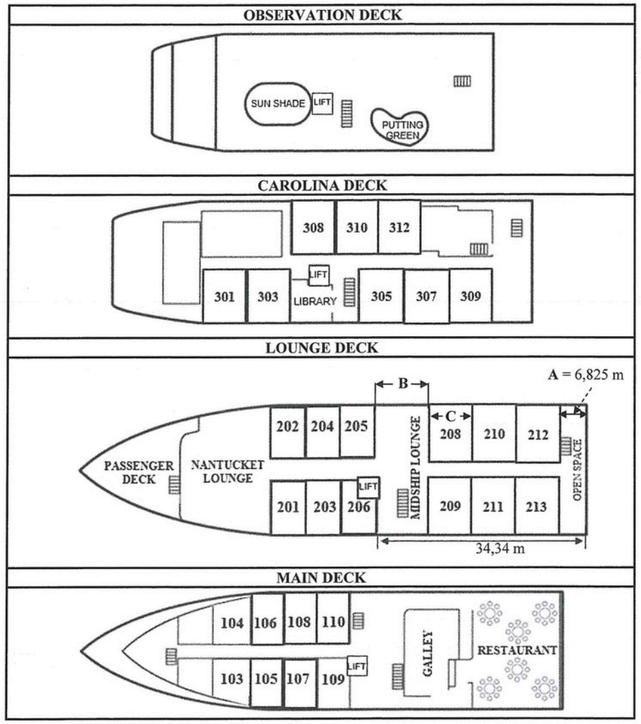
NOTE:

- A deck on a ship is like a floor in a building; it divides the ship into different levels.
- A stateroom is a bedroom designed to look like a hotel room on a ship.

PICTURE OF A SMALL CRUISE SHIP



ANNEXURE C: LAYOUT PLAN OF A CRUISE SHIP



106–110	Stateroom with window
201–206	Stateroom with window
208–213	Stateroom with balcony
LIFT	Lift

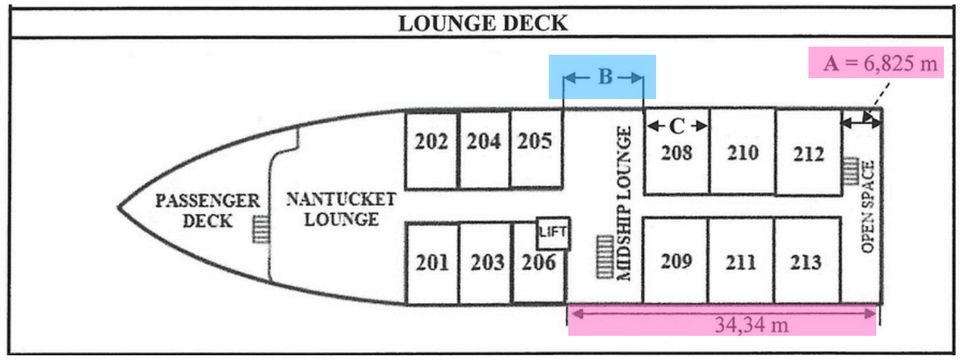
103–105	Single room with window
301–312	Stateroom with balcony
	Stairs
	Tables and chairs

[Adapted from smallcruiseadventures.com]

4.1.2 There are 28 staterooms on the ship. Express the number of staterooms with a window as a decimal, rounded to the nearest $\frac{1}{1\,000}$ of the total number of staterooms. (4)

QUESTION 4.1.6 (b)

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4.1.6 The dimensions of the lounge deck are given in TABLE 4 below. Some of the information has been omitted.

TABLE 4: DIMENSIONS OF THE LOUNGE DECK

ITEM	DIMENSIONS
Stateroom with balcony	… m × 6,5 m
Midship lounge (**B**)	13,65 m
Stateroom with window	2,8 m × 5,5 m
Internal walls (thickness)	0,045 m

(b) Calculate missing dimension **C**, shown on ANNEXURE C. (7)

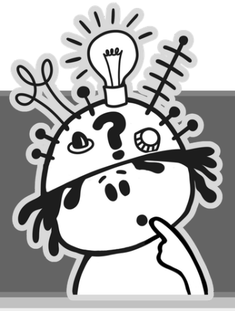
ADDITIONAL COMMENTS

A cruise ship is a VERY unfamiliar context for the majority of our learners. It begs the question, how unfamiliar should our exam questions be?

Perhaps a multistory building could be used - it is conceptually the same, but not quite so far removed from most learners' point of reference.

CHALLENGES

Data extraction & Internal walls



PROPOSED MEMO

OPTION 1

Combined length of rooms 208, 210 & 212

= total length – A – B – (4 x internal walls)

= 34,34 m – 6,825 m – 13,65 m – (4 x 0,045 m)

= 13,865 m – 0,18 m

= 13,685 m

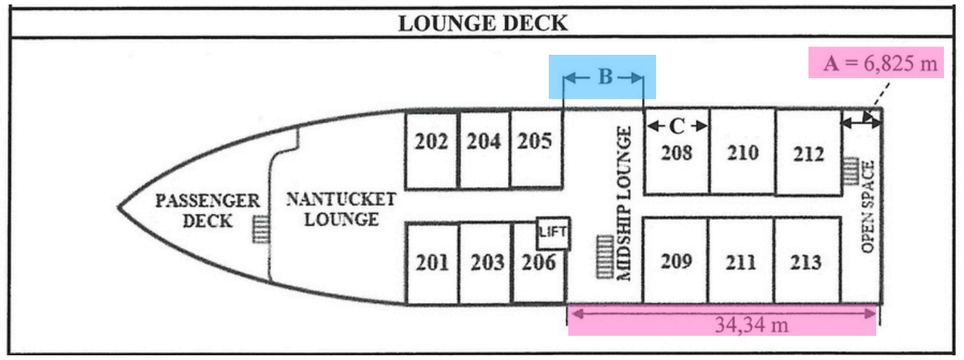
∴ C = 13,685 m ÷ 3 rooms

= 4,56 m

(continued)

QUESTION 4.1.6 (b)

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4.1.6 The dimensions of the lounge deck are given in TABLE 4 below. Some of the information has been omitted.

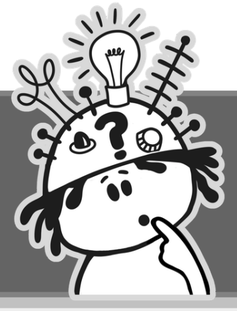
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Midship lounge (**B**)	13,65 m
Stateroom with window	2,8 m × 5,5 m
Internal walls (thickness)	0,045 m

(b) Calculate missing dimension **C**, shown on ANNEXURE C. (7)

CHALLENGES

Data extraction & Internal walls



PROPOSED MEMO OPTION 2

Combined length of rooms 208, 210 & 212
= total length – A – B
= 34,34 m – 6,825 m – 13,65 m
= 13,865 m

Length of room 208
= 13,865 m ÷ 3 rooms
= 4,62 m

∴ C = length of room 208 – (2 x internal walls)
= 4,62 m – (2 x 0,045 m)
= 4,62 m – 0,09 m
= 4,53 m

[Answer Option 1 = 4,56 m]

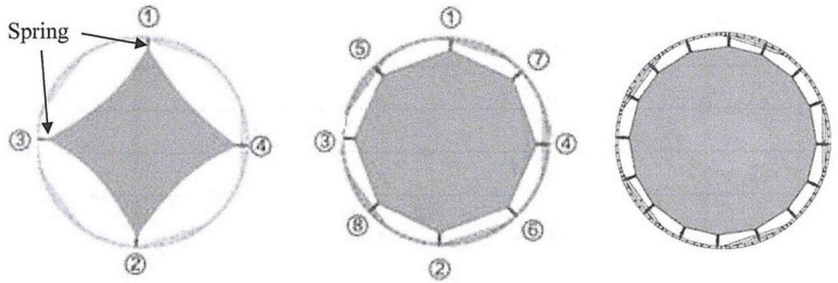
QUESTION 4.2.2

THE ANSWER SERIES *Your Key to Exam Success*

STEP 5:

Install the springs diagonally according to a certain pattern to ensure that the tension is distributed evenly across the jumping mat.

DIAGRAM A **DIAGRAM B** **DIAGRAM C**



[Adapted from www.pinterest.com]

4.2.2 The diagonal installation of the springs is shown in DIAGRAM A and DIAGRAM B of the sketch. If the 9th spring is installed between spring 1 and spring 7, complete the sequence of installing the NEXT THREE springs by choosing the CORRECT option from the list below. Write ONLY the letter (A–C) next to the question number (4.2.2).

NOTE:

To ensure even tension and prevent issues with subsequent spring installation, install the springs diagonally. For example, begin at the 12 o'clock position and then at the 6 o'clock position.

A Between 2 and 8; between 4 and 6; between 1 and 5
B Between 2 and 8; between 3 and 5; between 4 and 6
C Between 3 and 8; between 4 and 6; between 4 and 7 (2)

COMMENTS

- Language clumsy ➡ barrier
- Confusing 'begin at 12 o'clock position and then at the 6 o'clock position' ➡ but diagram starts installation between 1 and 7?
- Clockwise or anticlockwise installation?
- A lot of words to understand for only 2 marks ➡ waste time?



QUESTION 5.1.4

THE ANSWER SERIES *Your Key to Exam Success*

Polo is a sport very similar to hockey or soccer, which is played on horseback.

ANNEXURE E in the ANSWER BOOK shows a layout plan, entrance fees and parking costs for the Cowdray Polo Club, a popular ground for polo in the United Kingdom.

INFORMATION ABOUT THE SPORT POLO	POLO PLAYERS DURING A MATCH
OBJECTIVE: To score the most goals by hitting the ball through the opponent's goalposts THE MATCH: • Played in sessions called chukkas • Chukka – a period of play before a break • The width of LAWN ONE = 160 yards	

[Adapted from app.com.uk and wikipedia.org/wiki]

5.1.4 On one specific day, a match had 6 chukkas, EACH lasting 7,2 minutes, as well as a 4-minute chukka break and a half-time break. The half-time break lasted 10 minutes.

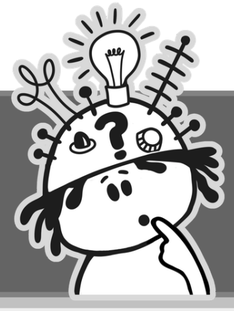
Calculate, in hours, minutes and seconds, the total duration of the polo match. (7)

ADDITIONAL COMMENTS

- Again, this context is VERY unfamiliar to the majority of our learners, so many will be very disadvantaged here, as they have zero point of reference.
- This is the 2nd very unfamiliar question (after the cruise ship) - which may unsettle many learners.

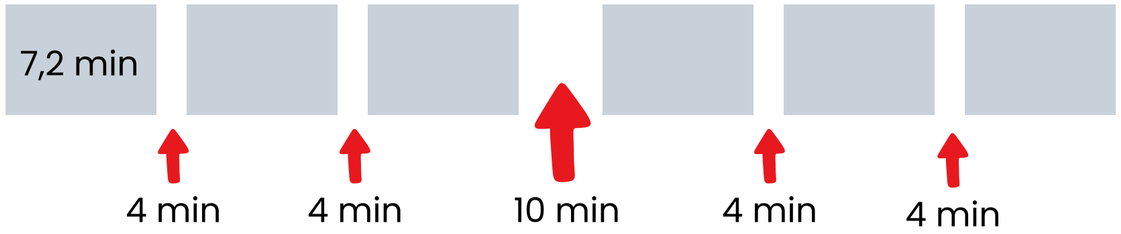
CHALLENGES

Use sport 'logic'



PROPOSED MEMO

OPTION 1



6 chukkas x 7,2 min = 43,2 min
4 breaks x 4 min = 16 min
half-time break = 10 min
69,2 min

∴ Total duration of polo match
= 1 h + 9 min + (0,2 min x 60)
= 1 h 9 min 12 sec

(continued)

QUESTION 5.1.4

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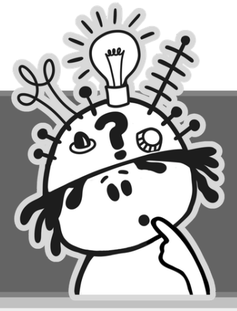
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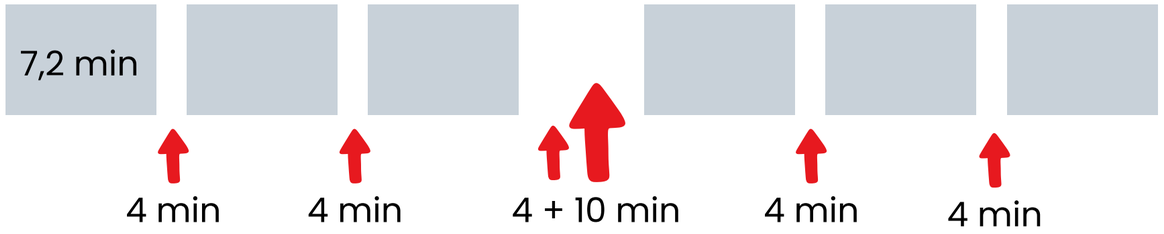
Calculate, in hours, minutes and seconds, the total duration of the polo match. (7)

CHALLENGES

Use sport 'logic' + Interpret wording



PROPOSED MEMO OPTION 2



6 chukkas x 7,2 min = 43,2 min
5 breaks x 4 min = 20 min
half-time break = 10 min
73,2 min

∴ Total duration of polo match
= 1 h + 13 min + (0,2 min x 60)
= 1 h 13 min 12 sec

(continued)

QUESTION 5.1.4

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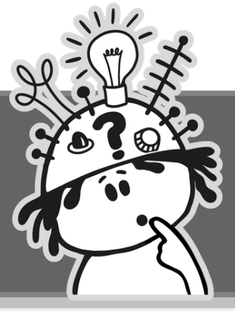
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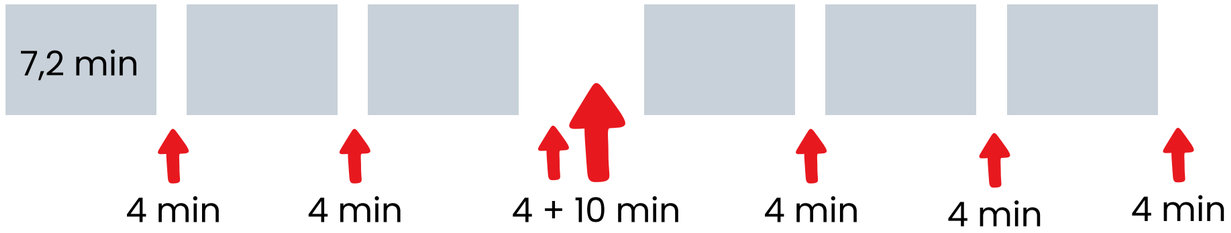
Calculate, in hours, minutes and seconds, the total duration of the polo match. (7)

CHALLENGES

Interpret wording



PROPOSED MEMO OPTION 3



6 chukkas x 7,2 min = 43,2 min
6 breaks x 4 min = 24 min
half-time break = 10 min
77,2 min

∴ Total duration of polo match
= 1 h + 17 min + (0,2 min x 60)
= 1 h 17 min 12 sec

QUESTION 5.2.1

THE ANSWER SERIES *Your Key to Exam Success*

The Cowdray Polo Club has to manage the waste on the club grounds after a polo match.

The table below shows the different sizes of wheelie bins (bins on wheels to collect refuse), with the equivalent number of refuse bags and their maximum capacities.

PICTURES OF WHEELIE BINS AND SIZES		MAXIMUM WHEELIE-BIN CAPACITY	
		NUMBER OF REFUSE BAGS	IN LITRES
Small		11	660
Medium		13	770
Large		18	1 100

[Adapted from www.onitdirect.co.uk]

NOTE:

- **Volume = length × width × height**
- Outer measurements of a large wheelie bin in the table are given as: length = 1,370 m, width = 1,050 m and height = 1,385 m
- 1 m^3 = 1 000 litres

Use the above information to answer the questions that follow.

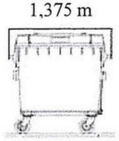
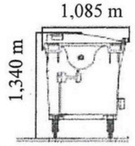
5.2.1 Calculate, in litres, the difference between the *volume* and the *capacity* of the large 1 100-litre wheelie bin. (4)

5.2.2 The general assistants collected waste that filled exactly 53 refuse bags.

Determine the minimum combination of wheelie-bin sizes required to hold all the waste that was collected.

NOTE: All bins must be filled to capacity. (3)

5.2.3 Below are the outer dimensions of a small wheelie bin.

UPRIGHT FRONT VIEW	UPRIGHT SIDE VIEW
	

A trailer with the following dimensions is used to move the wheelie bins on the grounds: length = 4,13 m and width = 2,17 m.

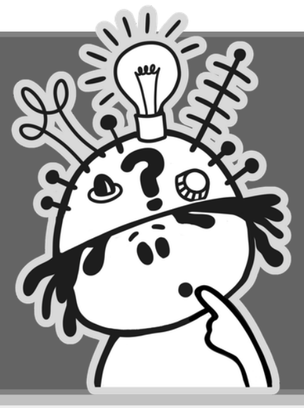
Determine the maximum number of small wheelie bins that can fit exactly on the trailer. Wheelie bins are transported on the trailer in an upright position. (6)

[28]

CHALLENGES

Mark allocation could be more

- Calculate volume (x2)
- Convert m^3 to ℓ (x2) … tricky
- Difference btw. volume & capacity (x2)



PROPOSED MEMO

Volume of large wheelie bin
= length x width x height
= 1,370 m x 1,050 m x 1,385 m
= 1,9923225 m^3

∴ 1,9923225 m^3 = 1,9923225 m^3 x 1 000
= 1992,3225 ℓ

∴ Difference = volume – capacity
= 1992,3225 ℓ – 1 100 ℓ
= 892,3225 ℓ

ADDITIONAL COMMENTS

- Wheelie bins are an unfamiliar concept to many rural learners.
- In cases of unfamiliar contexts, diagrams should be used as a visual stimulus to aid understanding. However, these illustrations did not do them justice and could have perhaps been enlarged.

QUESTION 5.2.2 & 5.2.3

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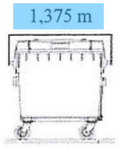
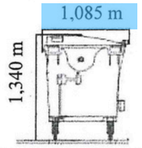
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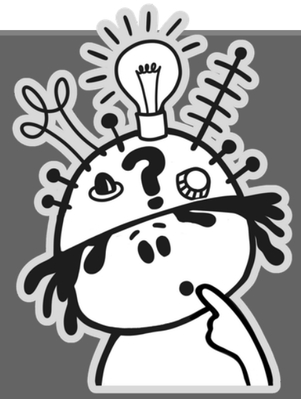
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[28]

CHALLENGES



Q5.2.2

Careful reading ... bins **filled to capacity**

Q5.2.3

Careful reading ... **maximum** no. of bins

PROPOSED MEMO Q5.2.2

2 x small bins = 11 x 2 = 22 bags

1 x medium bin = 13 bags

1 x large bin = 18 bags

53 bags

PROPOSED MEMO Q5.2.3

No. of bins across length

$$= \frac{4{,}13\ \text{m}}{1{,}375\ \text{m}}$$

= 3

No. of bins across width

$$= \frac{2{,}17\ \text{m}}{1{,}085\ \text{m}}$$

= 2

∴ Maximum no. of bins = 3 x 2 = 6 *[Min = 3 x 1 = 3]*

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