GRADE 11

MATHEMATICAL LITERACY

ASSIGNMENT 2

TOPICS: FINANCE, MAPS AND PLANS

MARKS: 50

2023 TERM 3

SUGGESTED TIME: HOURS

INSTRUCTIONS AND INFORMATION

1. This assignment/investigation consists of THREE questions. Answer ALL the questions.
2. Number the questions correctly according to the numbering system used in this assignment/investigation.
3. Start EACH question on a NEW page.
4. You may use an approved calculator (Non-programmable and non-graphical, unless stated otherwise.
5. Show ALL calculations clearly.
6. Round off ALL final answers appropriately according to the given context, unless stated otherwise.
7. Indicate units of measurement, where applicable
8. Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.
9. Write neatly and legible

This assignment/investigation consists of 3 questions and 6 pages

QUESTION 1

A food fair is going to be held at Zoo Lake. Chloe decides to set up a stall selling tortillas. It costs Chloe R5 to make a tortilla and R500 to rent the stall. She sells each tortilla for R15.

The table below shows the income that Chloe will make if she sells the tortillas

Number of tortillas	0	50	100	150	200	250
Total Income (R)	0	750	1 500	2 250	3 000	3 750

1.1.1   Write down a formula to represent Chloe's total expenses:
        Total Expenses = ⋯   (2)

1.1.2   Draw up a table to represent Chloe's expenses if she sells 0, 50, 100, 150, 200 and
        250 tortillas.   (3)

1.1.3   Use Annexure A to draw, on the same set of axes, a line graph representing
        Chloe's total income and another line representing her expenses. Label the graphs
        accordingly.   (5)

1.1.4   Determine the minimum number of tortillas that Chloe must sell in order to break
        even   (2)

1.1.5   Chloe sold 240 tortillas. Complete the income and expense statement on the
        ANNEXURE PROVIDED for the sale of 240 tortillas and show how much
        profit she made.   (6)

Income		Expense	
Sale of 240 tortillas		**Fixed cost**	
		Cost of each tortilla	
Total Income		**Total Cost of 240 tortillas**	
		Profit	

1.2 **Chloe is saving money to buy a flat screen television and to install DSTV in her flat. While browsing the internet, she came across the following special promotion.**


Chloe does not have enough money to pay cash for these items and investigates the hire purchase option. The deal entails the following:
- 10% deposit
- 20, 75% annual simple interest and 3 years to pay.

1.2.1 The promotion on the internet states that the discount offered on the more expensive option is 15%. Calculate the percentage discount if the original price was R10 499, 00 in order to verify the claim. (3)

1.2.2 If Chloe decides to take the more expensive deal. Calculate the deposit she has to pay. (2)

1.2.3 Identify the interest rate charged on the financed amount. (2)

1.2.4 Chloe paid R899,99 as a deposit. Calculate the amount payable after 3 years, excluding the deposit that he already paid. (4)

[29]

QUESTION 2

Use the floor plan of the house to answer the questions below.
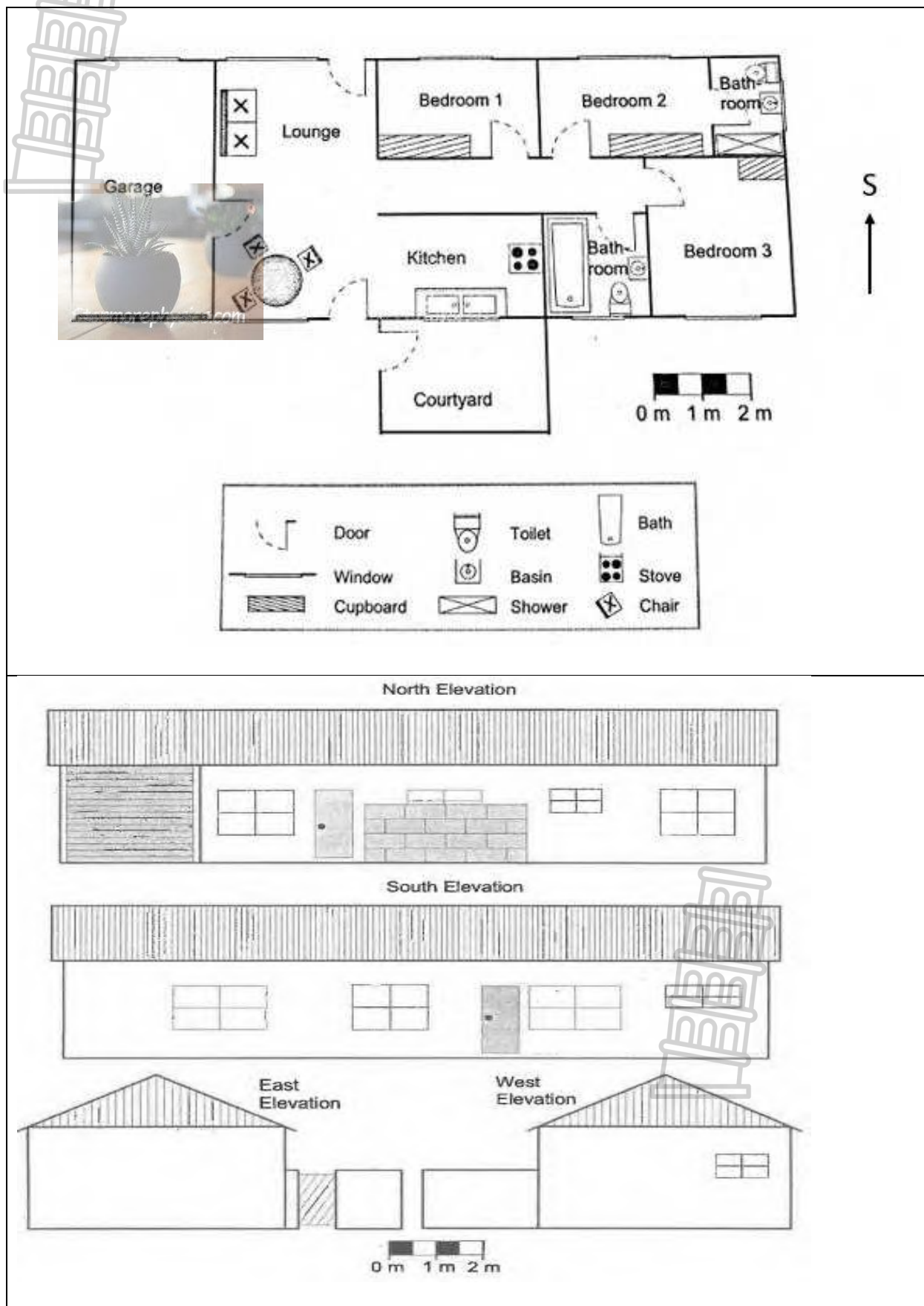
2.1 How many windows and doors are there in this house? (2)

2.2 Which elevation plan will you need to use to determine:
2.2.1 the length and height of the window in bedroom 3? (2)

2.3 Use the bar scale given on the floor plan to determine the actual length and width of bedroom 1. Give your answers to 1 decimal place. (6)

2.4 What information do the elevation plans provide that the floor plan does not? (2)

[12]

QUESTION 3

Thando would like to start a business. She wants to make heat insulated food delivery bags so that food stays warm during delivery. She has researched that on average the ideal size of the heat-insulated bag must have the following dimensions:
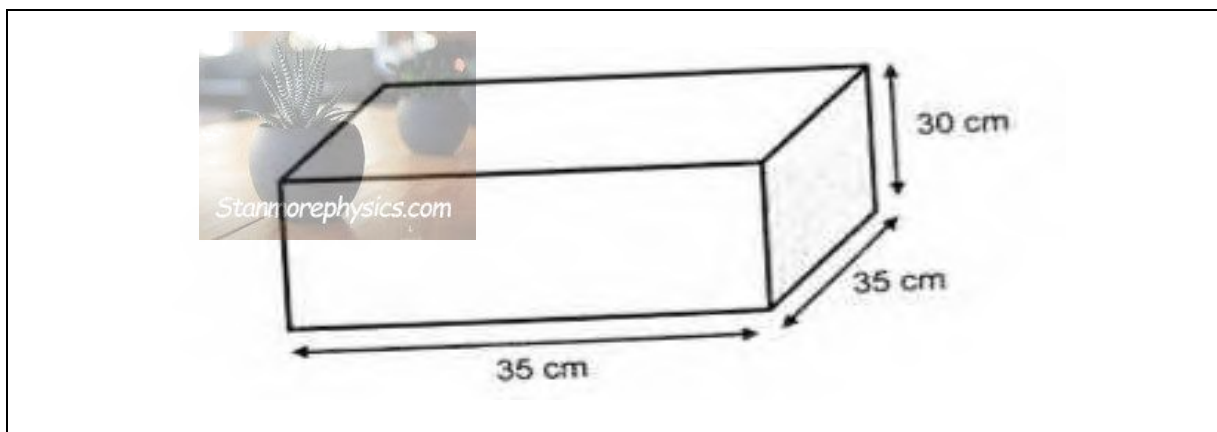
She tries to sell her heat-insulated delivery bag to Hot Pizzas who use pizza boxes with the following dimensions:
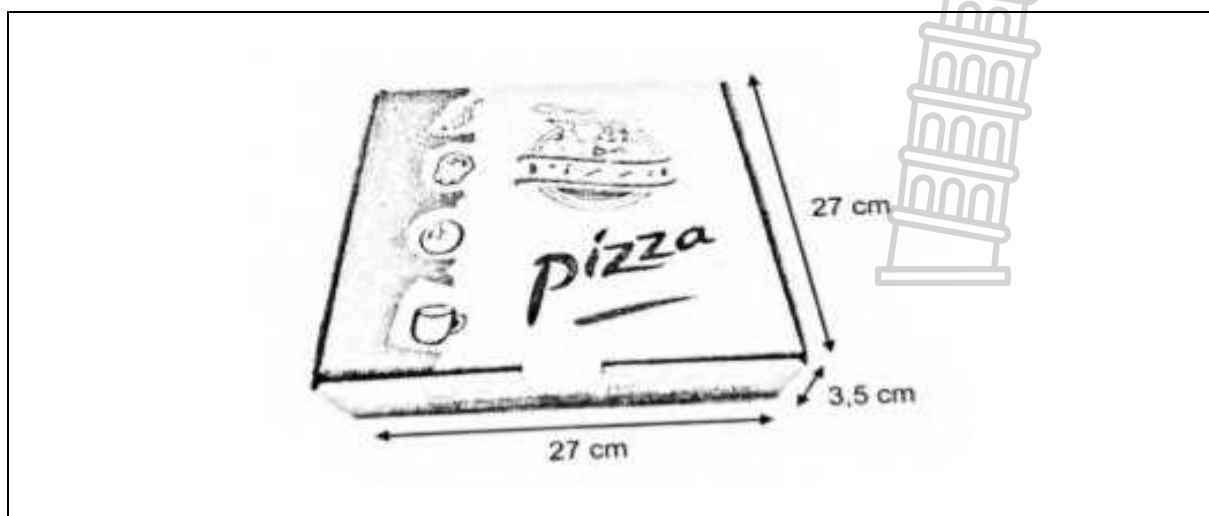
3.1 How many pizza boxes could Hot Pizzas fit into the heat-insulated bag? (2)

3.2 Hot Pizzas decide to increase the size of their pizzas, in order to be more competitive. They will now use a pizza box that is 15% bigger in all dimensions.

3.2.1 Will Hot Pizzas still be able to use Thando's heat-insulated delivery bag? Show all dimensions of the new pizza box to substantiate your answer? (5)

3.2.2 If Thando's bag is still an option, how many pizza boxes can fit into her bag after the 15% increase? (2)

[9]

NAME: -- **GRADE 11----**

ANNEXURE A

QUESTION 1.1.3

CHLOE'S TOTAL INCOME AND TOTAL EXPENSES

COST (R)

4 000

3 500

3 000

2 500

2 000

1 500

1 000

500

0   50   100   150   200   250

NUMBER OF TORTILLAS
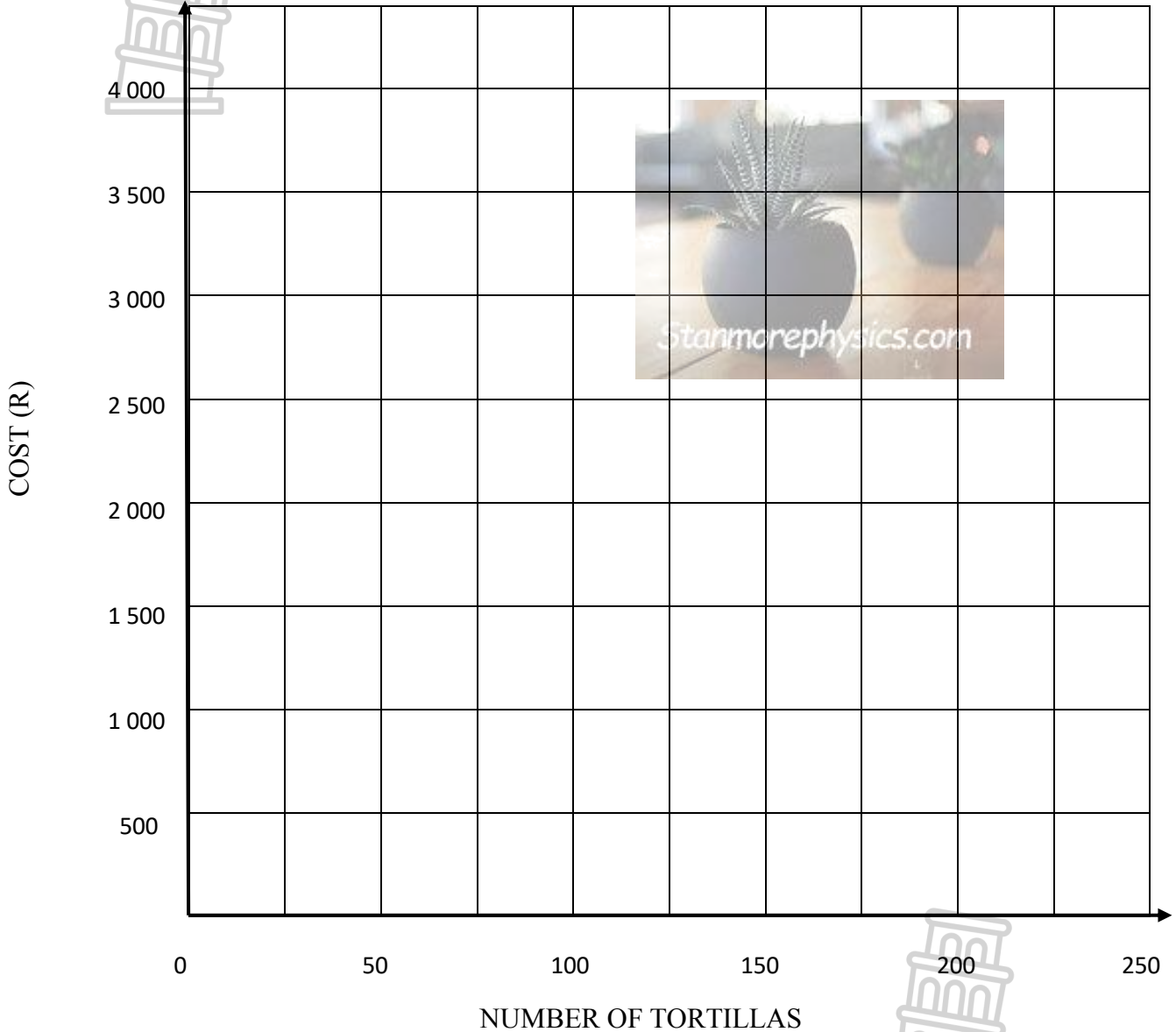
QUESTION 1.1.5

Income		Expense	
Sale of 240 tortillas		Fixed cost	
		Cost of each tortilla	
Total Income		Total Cost of 240 tortillas	
		Profit	

GRADE 11

MARKING GUIDELINES

MATHEMATICAL LITERACY

ASSIGNMENT 2
TOPICS: MAPS, PLANS AND FINANCE
MARKS: 50
2023 TERM 3
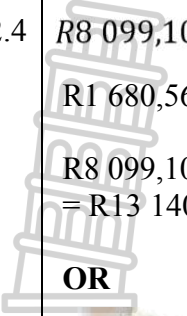
3 Pages

Codes	Explanation
M	Method
MA	Method with Accuracy
CA	Consistent Accuracy
A	Accuracy
C	Conversion
D	Define
J	Justification/Reason/Explain/Conclusion
S	Simplification
RT	Reading from a graph
SF	Substitution in the formula
O	Opinion

MARKS:50

QUESTION 1							[29 MARKS]		
ANSWER							**EXPLANATION**	**Marks**	**TL**

1.1.1	$Total\ expense = R500 \checkmark + (R5 \times No.of\ tortillas) \checkmark$	1A Fixed cost 1A Cost price and number	(2)	TL1

1.1.2

0	50	100	150	200	250
500	750	1000	1250	1500	1750

$\checkmark$ $\checkmark$ $\checkmark$

		3CA Use formula from 1.1.1	(3)	TL2

1.1.3

2A starting point of each graph
1A Ending point of each graph
2A for any other point on each graph

(5) TL2

1.1.4	50 *tortillas*	1CA break even value from graph	(2)	TL1

1.1.5

	Income		Expense	
Sale of 240 tortillas	R3600 $\checkmark$	**Fixed cost**	R500 $\checkmark$
		Cost of each tortilla	R5 $\checkmark$
Total Income	R3600 $\checkmark$	**Total Cost**	R1700 $\checkmark$
		Profit	R1900 $\checkmark$

1A Sale of 240
1A Total income

1A Fixed cost

1A cost price

1CA total cost

1CA profit

(6) TL3

1.2.1	$\%\ discount = \dfrac{1\,500}{10\,499} \times 100 \checkmark$ $= 14{,}287 ...$ $\approx 14{,}29\% \checkmark$ The claim is incorrect. $\checkmark$	1 MA Method 1A Answer 1J Claim is correct	(3)	TL4

1.2.2	$10\% \times R8\,999 \checkmark = R899{,}90 \checkmark$	1 MA calculating 10% 1 A correct answer	(2)	TL1

1.2.3	$20{,}75\% \checkmark$	1 RT correct answer	(2)	TL1

			(4)	TL3
1.2.4	$R8\,099,10 \times \frac{20,75}{100} = R1\,680,56$ $R1\,680,56 \times 3 = R5\,041,69\checkmark A$ $R8\,099,10 + R5\,041,69 \checkmark M$ $= R13\,140,79\checkmark CA$ **OR** $\checkmark MA$ $R8\,099,10 \times \frac{20,75}{100} = R1\,680,56$ $R8\,099,10 + R1\,680,56 = R9\,779,66\checkmark A$ $R9\,779,66 + R1\,680,56 = R11\,460,22\checkmark A$ $R11\,460,22 + R1\,680,56 = R13\,140,78\checkmark CA$	1 MA Multiply by 20,75% or 0,2075 1 A R1 680,56 1 A R5 041,69 1 M Addition 1 CA Answer 1 MA Multiply by 20,75% or 0,2075 1 A R9 779,66 1 A R11 460,22 1 CA Answer		

QUESTION 2		[12 MARKS]		
ANSWER		**EXPLANATION**	**Marks**	**TL**
2.1	9 windows✓ and 9 doors✓	1A no. of windows 1A no. of doors	(2)	TL1
2.2.1	North elevation✓	1 A correct elevation	(2)	TL2
2..3	$1,9cm : 2m\checkmark$ $1cm : 1,05m\checkmark$ $Length = 3,1cm \times 1,05\checkmark = 3,255m \approx 3,3m\checkmark$ $Width = 1,9cm \times 1,05\checkmark = 1,995m \approx 2m\checkmark$	1A using correct measurement of bar scale 1A scale in the correct form 2CA calculating the length 2CA calculating the width	(6)	TL2
2..4	The elevation plans provide information about the heights of walls, windows and doors as well as the position of windows and doors. Information about the roof is also provided.	2A Height and roof	(2)	TL4

QUESTION 3		[19 MARKS]		
ANSWER		**EXPLANATION**	**Marks**	**TL**
3.1	$Number\ of\ pizza\ boxes = 30cm \div 3,5\checkmark$	1MA divide by 3,5	(2)	TL1

	$= 8,57\ boxes$ $\approx 8\ boxes$✓	1R Rounding down		
3.2.1	$Length\ increase = (15\% \times 27cm) + 27$ $\qquad\qquad = 4,05cm✓ + 27cm$ $\qquad\qquad = 31,05cm✓$ Since the length and breadth are the same: $Breadth = 31,05cm✓$ $Height\ increase$ $\qquad = (15\% \times 3,5cm) + 3,5cm$ $\qquad = 0,53cm + 3,5cm$ $\qquad = 4,03cm✓$ $Dimensions\ of\ new\ box$ $\qquad = 31,05cm \times 31,05cm$ $\qquad \times 4,03cm$ Hot pizzas will still be able to use Thando's pizza delivery bag✓	1M Calculating the increase 1M increased length 1A increased breadth 1M increased height 1J concluding statement	(5)	TL4
3.2.2	$Number\ of\ pizza\ boxes$ $\qquad = 30cm \div 4,03cm✓$ $\qquad = 7,44\ boxes$ $\qquad \approx 7\ boxes✓$	1MA divide by 4,03cm 1R Round down	(2)	TL1