education

Department:
Education
PROVINCE OF KWAZULU-NATAL

NATIONAL SENIOR CERTIFICATE:
COMMON TEST JUNE 2018

**TO: THE CHIEF INVIGILATOR OF ALL SCHOOLS OFFERING
MATHEMATICAL LITERACY P2: GRADE 10**

ERRATA

Please take note of the following change:

Page	ERROR	CORRECTION
Annexure A Question 3.1	**The name Jessica is next to the block – Teachers Desk**	The name Jessica should be in block 5 on the top.

Kindly ensure that candidates are informed of the Errata.

_____
MR C. KHUMALO
ASSISTANT DIRECTOR
PROVINCIAL EXAMINATION

DATE _____2018 June 05_____

Department:
Education
PROVINCE OF KWAZULU-NATAL

NATIONAL
SENIOR CERTIFICATE

GRADE 10

MATHEMATICAL LITERACY P2

COMMON TEST

JUNE 2018

MARKS: 50

TIME: 1 hour

This question paper consists of 5 pages with 1 answer sheet and 1 annexure.

INSTRUCTIONS AND INFORMATION

1.   This question paper consists of THREE questions. Answer ALL the questions.

2.   Answer QUESTION 2.3 on the attached ANSWER SHEET. Write your Name in the space provided on the ANSWER SHEET and hand in the ANSWER SHEET with your ANSWER BOOK.

3.   Use ANNEXURE A to answer question 3.1.

4.   Number the answers correctly according to the numbering system used in this question paper.

5.   Start EACH question on a NEW page.

6.   You may use an approved calculator (non-programmable and non-graphical). Unless stated otherwise.

7.   Show ALL the calculation clearly.

8.   Round off ALL the final answers appropriately according to the given context, unless stated otherwise.

9.   Indicate units of measurements, where applicable.

10.   Maps and diagrams are NOT necessarily drawn to scale, unless stated otherwise.

11.   Write neatly and legibly.

QUESTION 1

A box contains 25 units of compact disks recordable (CD-R) (9 390 g).
Compact disks are sold in a small container box as illustrated below.

12cm

117.5mm

*Recording time: 80 min
per CD-R with capacity
of 700 mb*
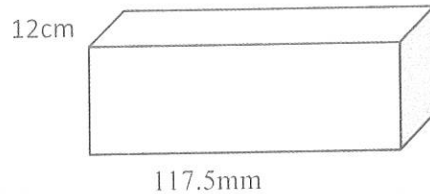
*Price R317, 50
VAT incl.
@15%*

Source:http://google.com

1.1	Calculate the area of the box. You may use the following formula $A = l \times b$	(3)
1.2	The actual height of the box to store the disks is 186cm. Determine the scaled height of the box, if the scale used to draw the box is 1:20	(2)
1.3	Calculate the unit cost price per CD-R including VAT.	(2)
1.4	Convert one CD-R recording time into hours.	(2)
1.5	**Gb** is the volume in gigabytes and **mb** is the volume in megabyes. Express the total volume of ALL CD-R in a t box in gigabytes if **1Gb= 1 000mb**	(3)
1.6	Suggest ONE possible reason why the CD-R are packed into a plastic cassing before their placed into a box?	(2)
1.7	Mary buys a pack of 25 CD-R and sells each unit for R10. Give a valid reason why is it not advisable for her to sell a single CD-R at this price.	(2)

[16]

QUESTION 2

2.1

> Andriana inherited R200 000 for his three children Zodwa (13), Thembi (17) and Mazwi (20) according to their age.

2.1.1   Andriana states that Thembi and Mazwi will get R148 000 of their total share combined. Show with calculations if her statement is correct.   (4)

2.1.2   Is the income received by the children (fixed, variable or occasional)? Why   (3)

2.2   Below is Andriana's personal household monthly budget. Study her budget and answer the questions that follow.

Andriana May 2018 Budget				
Income		**Expenditure**		
Salary	R7 500	Rent	R1 400	
Interest from investment	R 400	Car repayment	R2 100	
Profit from the business	R3 500	Fixed deposit	R1 200	
		Electricity and property		
		Rates	R1 800	
		Food	R1 500	
		Cell phone and internet	R 560	
		Other expenses	R2 000	
Total income:	**R11 400**	**Total expenditure:**	????	
Money left over:	????			

2.2.1   Andriana would like to purchase the new internet Wi-Fi router device worth R1 200.
State whether she will be able to afford during the month of May, by calculating money left over? Assume she spent all her R2 000 for other expenses.   (3)

2.2.2   The economic sense of rent is not to exceed 30 per cent of your income. Does Andriana's rent complies with this rule of thumb? Explain and show all your calculations.   (3)

2.2.3   Name ONE expense that could be in a category of Andriana's other expenses.   (2)

2.3   Andriana sells T-shits in order to supplement her salary. The graph for her income is already drawn in the answer sheet. Draw the cost graph for 100 sold t-shirts, if her fixed costs are R1000 and her production costs per t-shirt is R50.   (4)
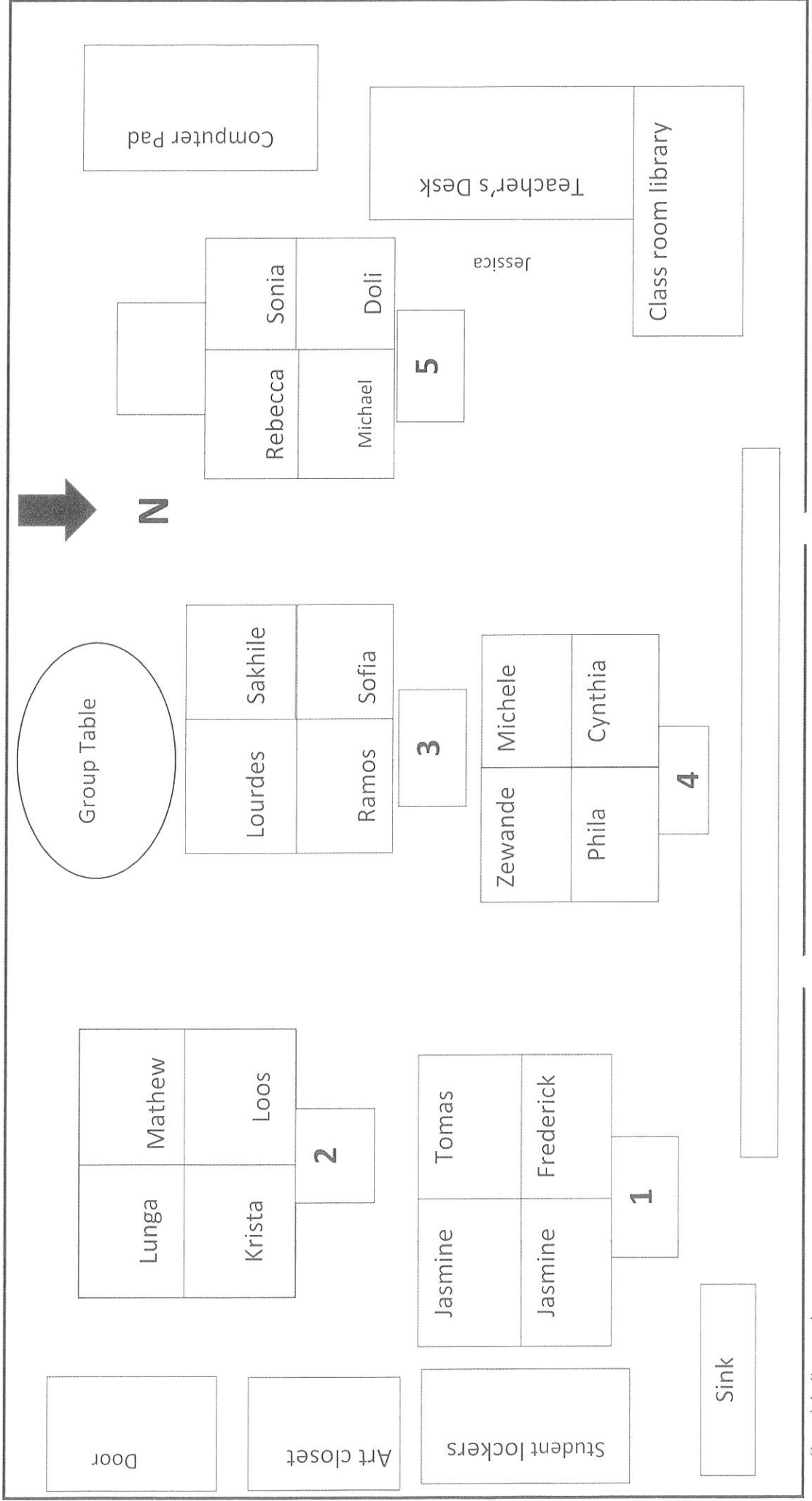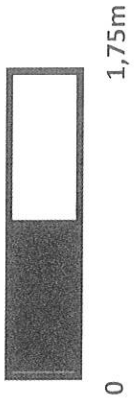
[19]

QUESTION 3

3.1 | Miss Norman is a teacher at Glenwood Primary School. Study her classroom management layout in ANNEXURE A and answer the following questions:

   3.1.1   What could be affixed on the Northern wall of the classroom between the sink and the classroom library?   (2)

   3.1.2   Use the bar scale to determine the actual width of the classroom, if the width of the classroom on the layout is 14.5cm .   (2)

   3.1.3   Give one advantage of bar scale according to the given context   (2)

3.2   Determine the probability to the nearest percentage for a learner whose name will **not** start with letter J from the classroom.   (3)

3.3   The classroom group table has the diameter of 75cm calculate the circumference of the group table in cm.

    You may use the formula: $C = \pi \times d$, where d is the diameter of the table and C is the circumference of the circle, use $\pi = 3.142$.   (2)

3.4   The area of one learner's desk is 0.25 square metres; determine the total area of all learners desk if they are all the same.   (2)

3.5   Where is Miss Norman's desk situated in relation to the classroom?   (2)

[15]

TOTAL: 50

ANNEXURE A

Question 3.1
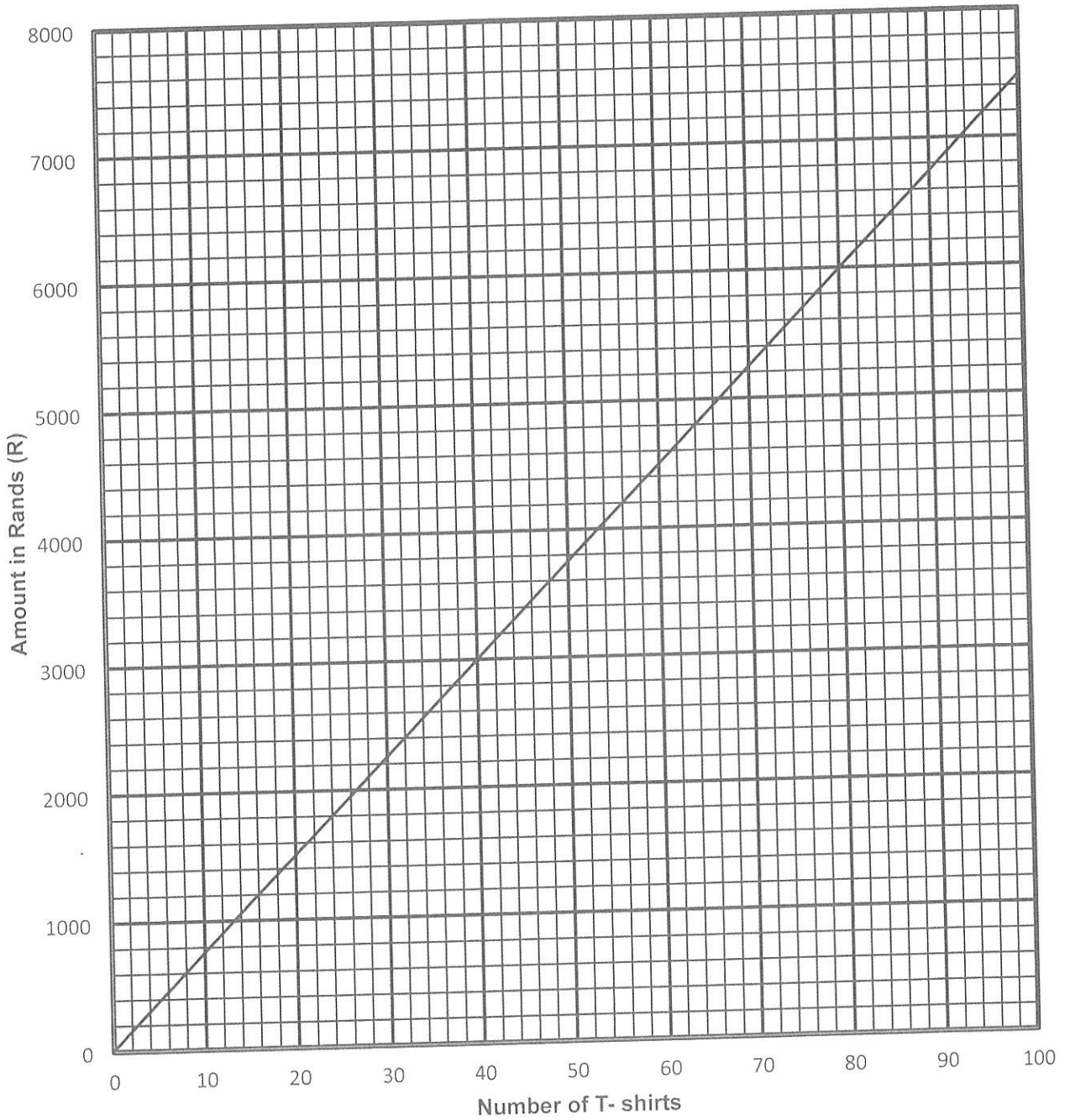
Miss Norman's 7th Grade— Room 205 classroom layout

0   1,75m

N

Computer Pad

Teacher's Desk

Jessica

Class room library

Rebecca	Sonia
Michael	Doli

5

Group Table

Lourdes	Sakhile
Ramos	Sofia

3

Zewande	Michele
Phila	Cynthia

4

Lunga	Mathew
Krista	Loos

2

Jasmine	Tomas
Jasmine	Frederick

1

Door

Art closet

Student lockers

Sink

ANSWER SHEET

QUESTION 2.3

NAME: _____   GRADE: _____

T-SHIRTS BUSINESS

Amended

education

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MARKING GUIDELINE

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MARKS: 50

SYMBOL	EXPLANATION
M	Method
MA	Method with accuracy
CA	Consistent accuracy
A	Accuracy(Answer)
C	Conversion
S	Simplification
RT/RG/RD	Reading from a table/ graph/ diagram
NPR	No penalty for units/rounding
SF	Correct substitution in a formula
O	Opinion/ reason/deduction/example
J	Justification
R	Rounding off/
F	deriving a formula
E	Explanation
U	Units
AO	Answer only full marks

This marking guideline consists of 5 pages.

QUESTION 1   MARKS [16]

QUE	SOLUTION	EXPLANATION	T/L

1.1	Area = 117,5mm × 120mm ✓MA $\checkmark$S
	    = 14 100mm² ✓CA
	
	OR
	
	       ✓MA
	Area = 11,75cm × 12cm ✓SF
	    = 141cm² ✓CA
		1MA Conversion
		1SF
		1CA Answer
		
		OR
		
		1MA Conversion
		1SF correct substitution
		1CA Answer
		                                              (3)
			M
			TL2

1.2	The scaled height = $\dfrac{186}{20}$ ✓M
	           = 9,3cm ✓A
		1M Using the scale correct
		1A Answer
		                                              (2)
		Nb. The box is just under 2m high-unrealistic-but learners are to use given information
			MP
			TL3

1.3	Unit cost = $\dfrac{R317,50}{25}$ ✓M
	       = R 12,70 ✓A
		1M Dividing by 25
		1A Answer
		                                              (2)
			F
			TL2

1.4	Time in hours = $\dfrac{80\,min}{60}$
	          = 1,33hours ✓A
		1M Dividing by 60
		1A Answer
		                                              (2)
			M
			TL2

1.5	Total volume in mb = 700mb × 25 ✓M
	    = $\dfrac{700\,mb}{1000}$ ✓MA
	    = 17,5Gb ✓CA
		1M multiplying by 25
		1MA Dividing 17 500 by 1000
		1CA Answer
		                                              (3)
		Nb. The correct conversion is 1024MB = 1GB, but learner is required to use given factor.
			M
			TL3

1.6	To prevent damage/scratching on CD-R ✓✓O
	        OR
	To avoid CD-R not to stick to each other as there are thin in height ✓✓O
	
	                                   (2)
		2O Opinion	M
			TL4

1.7	Because she will make a loss of R2,70 per CD-R ✓✓O
	        OR
	She will make a loss ✓✓O
	        OR
	Her income will be less than her expenses ✓✓O
	        OR
	She won't make any profit ✓✓O
	        OR
	She will not break-even. ✓✓O (2)
		2O Reason	F
			TL4

		[16]	

QUESTION 2 MARKS [19]

QUE	SOLUTION	EXPLANATION	T/L
2.1.1	Thembi's and Mazwi's share = $\dfrac{37}{50}$ ✓A x $R200\,000$ ✓MA ✓M = R148 000 Yes the statement is correct ✓O **OR** One part of share = $\dfrac{R200\,000 ✓MA}{50 ✓A}$ = R4 000 Thembi and Mazwi = 37 x R4 000 ✓M =R148 000 Yes the statement is correct ✓O	1M Adding shares 1A dividing by 50 1MA multiplying by R200 000 1O conclusion **OR** 1MA multiplying by R200 000 1A dividing by 50 1MA dividing in a ratio × 37 1O conclusion (4)	F TL3
2.1.2	Occasional, because the income is not received on ✓A regular basis ✓✓E **OR** Because it is an unexpected income✓✓E	1A Answer 2E Reason 2E Reason (3)	F TL4
2.2.1	Money left over = R11 400 – R10 560✓M = R840✓CA She won't be able to buy the device in May because she is short of R360✓J **OR** No, She will not be able✓J	1M Calculating total expenses and subtraction 1CA Answer 1J Justification (3)	F TL4
2.2.2	Rent as % = $\dfrac{R1\,400}{R11\,400}$ x 100% ✓MA = 12,28%✓CA Yes, she is living according to the rule✓J	1MA % concept 1CA Answer 1J Yes Justification (3)	F TL4
2.2.3	Car Maintenance ✓✓O **OR** House hold maintenance✓✓O **OR** Clothing expense✓✓O **OR** Petrol expense✓✓O	2O Opinion **OR** 2O Opinion **OR** 2O Opinion **OR** 2O Opinion (2)	F TL4

2.3

T-SHIRT BUSINESS

Amount in Rands (R) (vertical axis, values: 0, 1000, 2000, 3000, 4000, 5000, 6000, 7000, 8000)

✓A

✓A Cost

✓A

✓A

Number of T- shirts (horizontal axis, values: 0, 20, 40, 60, 80, 100)
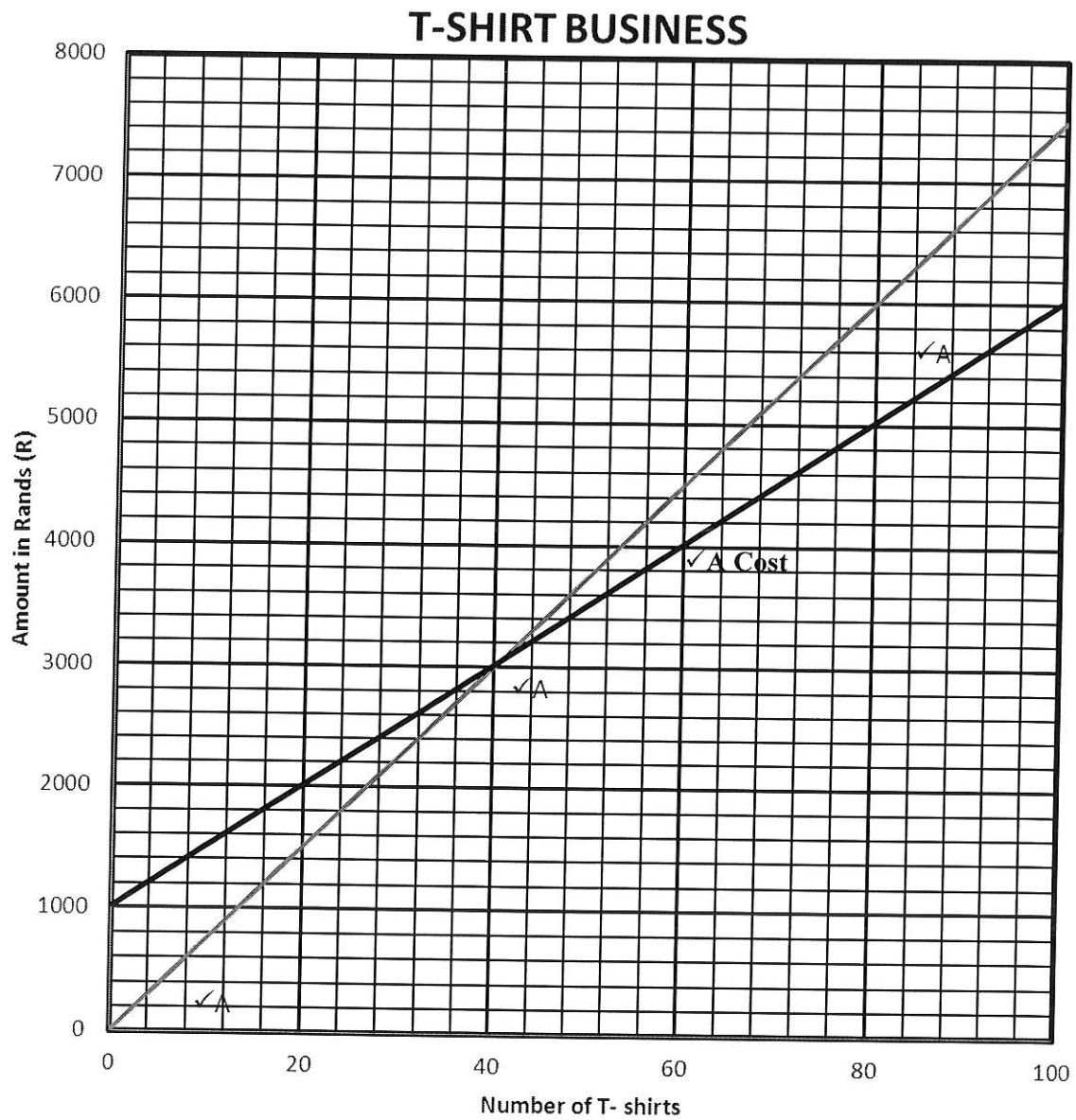
1A, Starting point   ✓
1A, correct break-even point✓
1A, Joining straight line✓
1A, labelling the graph✓

QUESTION 3 MARKS [15]

QUE	SOLUTION	EXPLANATION	TL
3.1.1	Chalkboard, ✓✓A **OR** Soft board✓✓A **OR** Writing board✓✓A	2A Answer **OR** 2A Answer **OR** 2A Answer (2)	MP TL4
3.1.2	Actual width = $\dfrac{14,5}{4\,cm}$ x 1,75 m ✓MA = 6,34m✓A	1MA use of bar scale 1CA Answer (2)	MP TL2
3.1.3	When the classroom layout is resize the scale remains accurate with the new size of the diagram ✓✓E	2E Explanation (2)	MP TL4
3.2	P(name not start with J) = $\dfrac{18^{\;✓M}}{21}$ x 100% ✓MA =85,714 =86%✓CA	1M correct numerator, 18 learners 1MA % concept 1CA Rounding (3)	TL3
3.3	C = 3,142 × 75cm✓SF = 235,65cm✓A	1SF correct substitution 1A Answer (2)	M TL2
3.4	Total Area = 0,25m²× 21 ✓M = 5,25m²✓CA	1M Multiply by 21 1CA Answer (2)	M TL2
3.5	Her table is in between the classroom library and computer Pad. ✓✓A **OR** Her desk is next to the library✓✓A **OR** NW of the classroom.	2A Answer (2)	MP TL4
		[15]	

TOTAL: 50