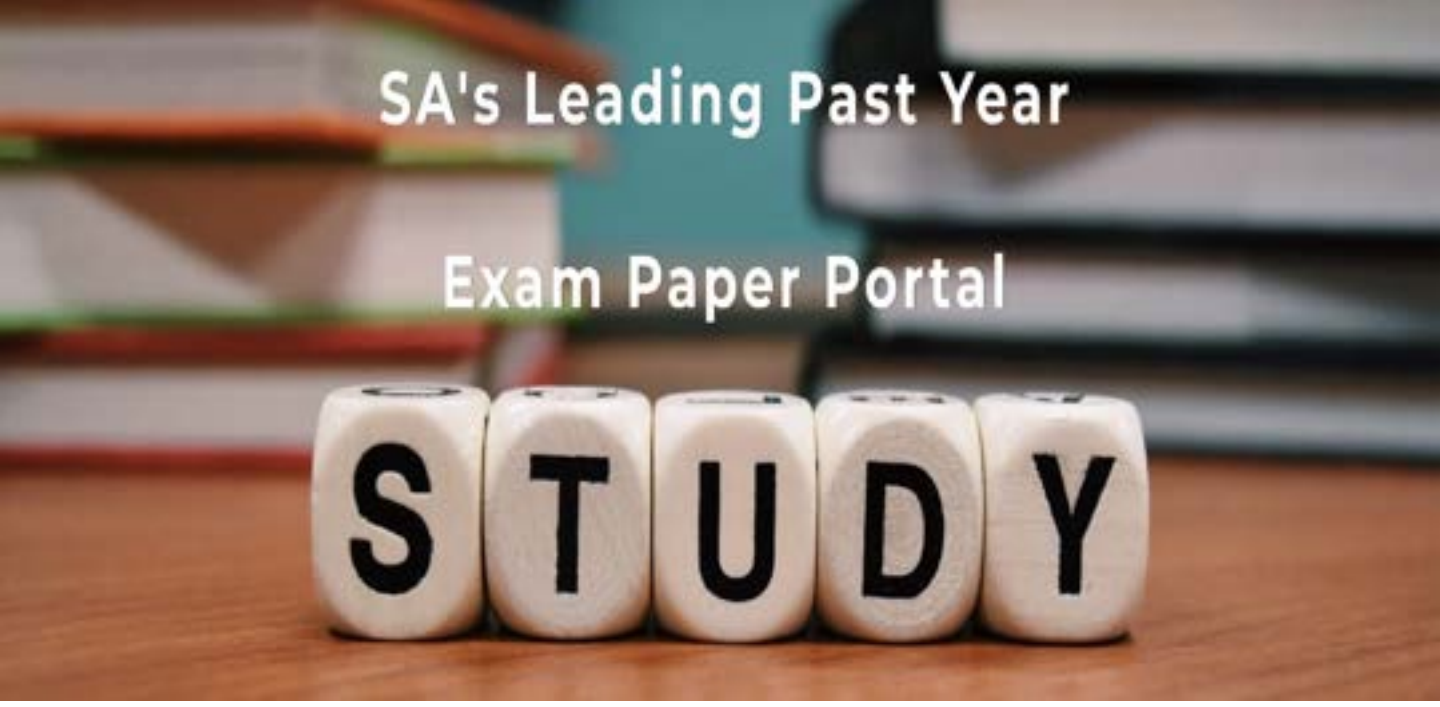
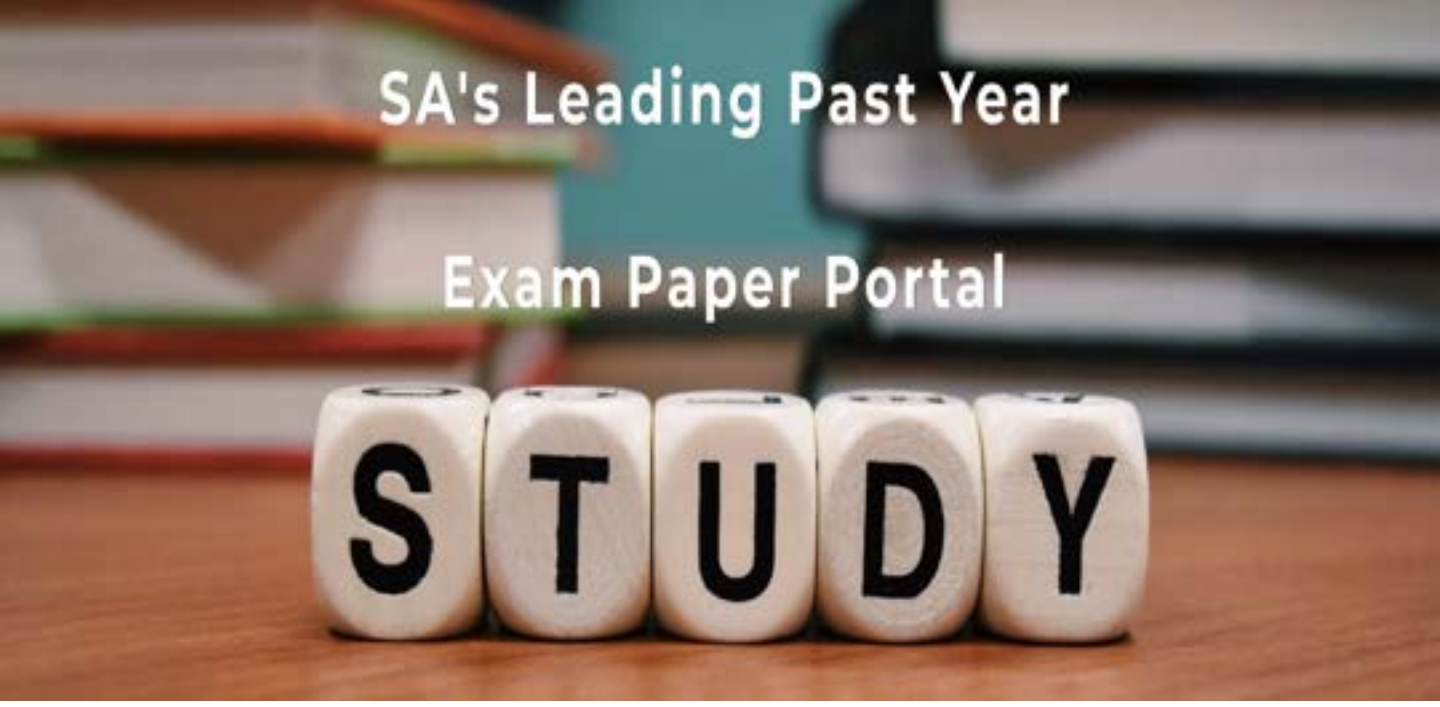


You have Downloaded, yet Another Great Resource to assist you with your Studies ☺

Thank You for Supporting SA Exam Papers

Your Leading Past Year Exam Paper Resource Portal

Visit us @ www.saexampapers.co.za



You have Downloaded, yet Another Great Resource to assist you with your Studies ☺

Thank You for Supporting SA Exam Papers

Your Leading Past Year Exam Paper Resource Portal

Visit us @ www.saexampapers.co.za

basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE/ *NASIONALE SENIOR SERTIFIKAAT*

GRADE 12

MATHEMATICAL LITERACY P2/ *WISKUNDIGE GELETTERDHEID V2*

NOVEMBER 2022

MARKING GUIDELINES/*NASIENRIGLYNE*

MARKS/*PUNTE*: 150

Symbol/*Kode*	Explanation/*Verduideliking*
M	Method/*Metode*
MA	Method with accuracy/*Metode met akkuraatheid*
MCA	Method with constant accuracy/*Metode met volgehoue akkuraatheid*
CA	Consistent accuracy/*Volgehoue akkuraatheid*
A	Accuracy/*Akkuraatheid*
C	Conversion/*Herleiding*
S	Simplification/*Vereenvoudiging*
RT	Reading from a table/a graph/document/diagram/*Lees vanaf tabel/grafiek/diagram*
SF	Correct substitution in a formula/*Korrekte vervanging in formule*
O	Opinion/Explanation/Reasoning /*Opinie/Verduideliking/redenasie*
P	Penalty, e.g. for no units, incorrect rounding off, etc./*Penalisasie, bv. vir geen eenhede/verkeerde afronding, ens.*
NPR	No penalty for correct rounding/*Geen penalisasie vir korrekte afronding nie*
AO	Answer only/*Slegs antwoord*

These marking guidelines consist of 21 pages, an analysis grid and notes.
Hierdie nasienriglyne bestaan uit 21bladsye, 'n analiserooster en notas.

APPROVED ON 16 November 2022	**External Moderators**		**Internal Moderator**
	R I Singh	E Cronje	L R deWaal

DEPARTMENT OF BASIC EDUCATION
PRIVATE BAG X895, PRETORIA 0001
2022 -11- 16
APPROVED MARKING GUIDELINE
PUBLIC EXAMINATION

NOTE:
- If a candidate answers a question TWICE, only mark the FIRST attempt.
- If a candidate has crossed out (cancelled) an attempt to a question and NOT redone the solution, mark the crossed out (cancelled) version.
- Consistent accuracy (CA) applies in ALL aspects of the marking guidelines; however, it stops at the second calculation error.
- NOTE: consistent accuracy (CA) does not apply in cases of a breakdown.
- If the candidate presents any extra solution when reading from a graph, table, layout plan and map, then penalise for every extra item presented.
- As a general marking principle, if a candidate has incurred one mistake and there is evidence of sound mathematics thereafter, then that candidate should lose one mark only.
- Rounding is an independent mark.
- In opinion type questions marks will only be awarded if relevant calculations are shown

LET WEL:
- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, sien slegs die EERSTE poging na.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, sien die doodgetrekte (gekanselleerde) poging na.*
- *Volgehoue akkuraatheid (CA) word in ALLE aspekte van die nasienriglyne toegepas, dit hou op by die tweede berekeningsfout.*
- *Let wel: volgehoue akkuraatheid (CA) geld nie in die geval van 'n afbreuk nie.*
- *Wanneer 'n kandidaat aflesings vanaf 'n grafiek, tabel, uitlegplan en kaart geneem en ekstra antwoorde gee, penaliseer vir elke ekstra item.*
- *'n Algemene nasien beginsel is dat indien 'n kandidaat een fout maak en daarna voortgaan met korrekte wiskunde, dat die kandidaat slegs een punt verloor*
- *Afronding tel as 'n afsonderlike punt.*
- *In Opinie tipe vrae sal punte slegs toegeken word indien relefante berekeninge aangetoon is.*

Note: Questions marked with * refers to the notes./*Vrae gemerk met *, verwys na die notas.*
Questions where the numbers are encircled are the ones where we have a tolerance range.
Vrae waar die nommer omkring is, is die waar ons 'n toleransie omvang het.

QUESTION/*VRAAG* 1 [27 MARKS/*PUNTE*] Answer Only AO - full marks			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
1.1.1	Z ✓✓A	2A correct time (2)	M L1 E
1.1.2*	24 hour /*uur* ✓✓A 12 hour /*uur*. ✓A	2A 1st display 1A 2nd display (3)	M L1 E
1.1.3*	✓A ✓A Quarter to one in the afternoon/ pm or post meridiam *Kwart voor een in die middag / nm* ✓A **OR/*OF*** ✓A Fifteen minutes to one in the afternoon Fifteen minutes before one in the afternoon *Vyftien minute voor een, namiddag*	1A correct time 1A afternoon **OR/*OF*** 1A correct time 1A afternoon (2)	M L1 E
1.1.4*	2 ✓✓A	2A correct number (2)	M L1 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
1.1.5	✓C 16 × 60 + 45 = 1 005 minutes/*minute* ✓ A	1C multiply hours by 60 1A adding correct values (2)	M L1 M
1.2.1	32 – (8 + 6 +8 + 8) ✓ MA = 2 bolts/*boute* ✓ A	1MA subtracting from 32 1A two bolts (2)	MP L1 E
1.2.2	2 nuts/*moere* ✓✓ A	2A correct number nuts (2)	MP L1 M
1.2.3*	Short brace ✓✓RT *Kort spanstuk*	2RT answer (2)	MP L1 E
1.3.1	Bar scale/*staaf skaal* ✓✓A **OR/*OF*** Line scale or linear scale / *lynskaal of liniêre skaal* **OR/*OF*** Graphic scale / *Grafiese skaal*	2A Correct scale (2)	MP L1 E
1.3.2*	Gauteng ✓✓RT	2RT correct province (2)	MP L1 E
1.3.3	N14 ✓RT N17 ✓RT	1RT 1st route 1RT 2nd route (2)	MP L1 E
1.3.4*	7 ✓✓A	2A number of destination towns (2)	MP L1 E
1.3.5	39 mm ✓✓A [allow 1 mm on both sides/*laat 1 mm weerskante toe*]	2A correct measurement (2)	MP L1 E
		[27]	

QUESTION/*VRAAG* 2 [36 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
2.1.1	✓✓ O To let in fresh air or ventilation. *Vars lug in te laat of ventilasie .* **OR/*OF*** ✓✓ O To let natural light in./Sunlight/sun rays to come in. *Om lig in te laat/sonlig/sonstrale te laat inkom.* **OR/*OF*** ✓✓ O For customers to enjoy the view outside. *Vir kliënte om die uitsig te kan geniet.* **OR/*OF*** ✓✓ O The windows are many because they are small sized. *Die vensters is klein daarom is daar so baie.* **OR/*OF*** People outside to view the inside, hence attract ✓✓ O customers *Mense kan van buite, binne toe kyk, dit trek gevolglik kliënte*	2O reason (2)	MP L4 M
2.1.2	Max. no of seats /*Maks. Getal stoele* ✓MA = 6 + 2 + 5 + 5 + 5 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 6 = 6 + 2 + 15 + 28 + 6 ✓S = 57 ✓CA **OR/*OF*** Max. no. of seats/*Maks. Getal stoele* ✓MA = 1 × 6 + 2 × 1 + 3 × 5 + 4 × 7 + 6 × 1 = 6 + 2 + 15 + 28 + 6 ✓S = 57 ✓CA	1MA adding correct numbers 1S simplification 1CA answer **OR/*OF*** 1MA multiply correct numbers 1S simplification 1CA answer **AO** (3)	MP L2 E
2.1.3*	13 seats/*stoele*. ✓✓ A	2A number of seats (2)	MP L2 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.1.4*	✓✓ O For people waiting to be seated. /*Vir mense wat wag vir 'n sitplek* **OR/*OF*** ✓✓ O A place you can wait for a dining table to be ready or prepared for one. / *'n Plek waar jy kan wag dat 'n tafel gereed gemaak word vir jou.* **OR/*OF*** ✓✓ O To sit on while waiting for your lift after visiting the restaurant. /*Om op te sit terwyl jy wag vir jou geleentheid nadat jy die restaurant besoek het.* **OR/*OF*** ✓✓ O Waiting area for customers who ordered take-aways. *Wag plek vir mense wat wegneemetes bestel het.* **OR/*OF*** ✓✓ O A place where customers can take pictures. / *'n Plek waar kliënte fotos kan neem.*	2O reason (2)	MP L4 E
2.1.5	✓ A Walk in an Easterly direction. ✓ A Then turn and walk in a Southerly direction. Then turn and walk in an Easterly direction. ✓ A *Loop in 'n Oostelike rigting.* *Draai en loop in 'n Suidelike rigting,* *draai weer en loop in 'n Oostelike rigting.*	1A East 1A South 1A East (3)	MP L3 M
2.1.6*	✓ A ✓ A Number 13 is left out, there are only 20 tables. *Nommer 13 is uitgelaat, daar is slegs 20 tafels.* Therefore, her claim is valid. *Daarom is haar bewering geldig.* ✓ O **OR/*OF*** Number of tables set for/ *tafels vir* 1 = 6 Number of tables set for / *tafels vir* 2 = 1 ✓ A Number of tables set for / *tafels vir* 3 = 5 Number of tables set for / *tafels vir* 4 = 7 Number of tables set for / *tafels vir* 6 = 1 Total =20 ✓ A Therefore, her claim is valid. *Daarom is haar bewering geldig.* ✓ O	2A Reasoning and reflecting 1O verification **OR/*OF*** 2A Reasoning and reflecting 1O verification (3)	MP L4 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.2.1	Tree diagram/*Boom diagram* ✓✓ A	2A tree diagram (2)	P L1 E
2.2.2 (a) 2.2.2 (b)	CSM / *HSM* ✓✓ A F (Fish) / *V / Vis* ✓✓ A	2A outcome 2A choice (4)	P L2 E
2.2.3*	4 ✓✓ A	2A correct number (2)	P L1 E
2.2.4*	✓ A P(malva) = $\frac{6}{12}$ × 100 % ✓ A = 50 % ✓ CA **OR/*OF*** ✓ A P(malva) = $\frac{1}{2}$ × 100 % ✓ A = 50 % ✓ CA	1A numerator 1A denominator 1CA simplified as a % **OR/*OF*** 1A numerator 1A denominator 1CA simplified as a % **AO** (3)	P L2 M
2.3.1	It is a map showing the course that runners have to follow in a race. ✓✓ A *Dit is 'n kaart wat die pad wat hardlopers sal volg aandui.* **OR/*OF*** A map that shows the path / way / direction the runners will run. ✓✓ A *'n Kaart wat die pad / weg / rigting wat die hardlopers sal volg, aantoon.* **OR/*OF*** A map that displays the roads that make up the course of the LAM. ✓✓ A *'n Kaart wat die pad wat die LAM volg, aandui.*	2A explanation (2)	MP L1 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
2.3.2*	✓✓ A There is no relationship (or ratio) between distances on a map and the corresponding distance on the ground. *Daar is nie 'n verhouding tussen die afstande op die kaart en die ooreenstemmende afstande in die werklikheid nie.* **OR/*OF*** ✓✓ A One should not measure the length on the map and then expect to be able to calculate the "real life" distance from it. *Jy kan nie die afstande op die kaart meet en verwag dat jy die werklike afstande kan bereken nie.* **OR/*OF*** ✓✓ A No specific scale was used throughout to draw this map (Candidates might mention a scale e.g.1 : 100). *Geen spesifieke skaal was deurgaans gebruik om hierdie kaart te teken nie. (Kandidate mag 'n skaal bv. 1: 100 noem).* **OR/*OF*** ✓✓ A Not to scale means the dimensions or measurements on the map are not accurate. *Nie op skaal beteken die afmetings op die kaart is nie akkuraat nie.*	2A explanation (2)	MP L4 M
2.3.3* (a)	The road is overshadowing or hide/covering or obscuring the route course. ✓✓ O *Die roete is obskuur of versteek of nie sigbaar waar die ander deel bo-oor dit gaan nie.* **OR/*OF*** ✓✓ O There is a break in the line that shows the route. *Die lyn wat die roete aandui word onderbreek.* **OR/*OF*** ✓✓ O Arrows disappear under the road / *Pyle verdwyn onder die pad.*	2O reasoning (2)	MP L4 M
2.3.3* (b)	Four (4) times/*Vier keer.* ✓✓ A	2A correct number (2)	MP L1 E
2.3.4	South west or SW/*Suidwes* ✓✓ A	2A correct direction (2)	MP L2 M
		[36]	

QUESTION/*VRAAG* 3 [29 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
3.1.1	Perimeter/*Omtrek* ✓SF $= 2 \times (239 + 89)$ mm ✓A = 656 mm ✓A **OR/*OF*** Perimeter/*Omtrek* = 239 mm +89 mm + 239 mm + 89 mm ✓ MA ✓ A = 656 mm ✓ A	1SF substitution 1A simplification 1A unit **OR/*OF*** 1MA adding all sides 1A simplification 1A unit **AO** (3)	M L2 E
3.1.2	Height opening/closing part/*Hoogte van die oop-/ toemaak gedeelte* ✓MA = 114 mm – 2,5 cm – 7 cm ✓C = 11,4 cm – 2,5 cm – 7 cm = 1,9 cm ✓CA **OR/*OF*** Height opening/closing part/*Hoogte van die oop-/ toemaak gedeelte* = 114 mm – (2,5 cm + 7 cm) ✓MA ✓C = 11,4 cm – 9,5 cm = 1,9 cm ✓CA **OR/*OF*** Height opening/closing part/*Hoogte van die oop-/ toemaak gedeelte* ✓MA = 114 mm – 25 mm – 70 mm $= \frac{190mm}{10}$ ✓C = 1,9 cm ✓CA	1MA subtracting both values 1C converting 1CA simplification **OR/*OF*** 1MA subtracting both values 1C converting 1CA simplification **OR/*OF*** 1MA subtracting both values 1C converting 1CA simplification (3)	M L2 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
3.1.3 (a)	Radius = $\frac{28mm}{2} = 14mm$ ✓A = 1,4 cm ✓C Volume = 3,142 × (1,4 cm)^2 × 8,5 cm ✓SF ✓SF = 52,34572 cm^3 = 52,346 cm^3 **OR/*OF*** Radius = $\frac{2,8\ cm}{2}$ ✓C = 1,4 cm ✓A Volume = 3,142 × (1,4 cm)^2 × 8,5 cm ✓SF ✓SF = 52,34572 cm^3 = 52,346 cm^3	1A radius 1C converting 1SF radius squared 1SF substitution **OR/*OF*** 1C converting 1A radius 1SF substitution 1SF radius squared (4)	M L3 M
3.1.3 (b)	0,82 = Mass / *Massa* ÷ 52,346 ✓SF Mass/*Massa* = 0,82 × 52,346 ✓M = 42,92372 g ✓A = 43 g ✓R	1SF substitution 1M changing the subject of the formula 1A simplification 1R rounded (4)	M L3 M
3.2.1*	Volume = 1,6 gallon/*gelling* × 4 × 28 × 5 ✓MA = 896 gallon/*gelling* Volume = 896 × 3,785 ℓ ✓C = 3 391,36 ℓ ✓CA **OR/*OF*** 1,6 gallon/*gelling* = 1,6 × 3,785 ℓ = 6,056 ℓ ✓C Volume water = 6,056 ℓ × 4 × 28 × 5 ✓MA = 3 391,36 ℓ ✓CA	1MA multiplication 1C conversion factor 1CA simplification **OR/*OF*** 1C conversion 1MA multiplication 1CA simplification	M L3 M

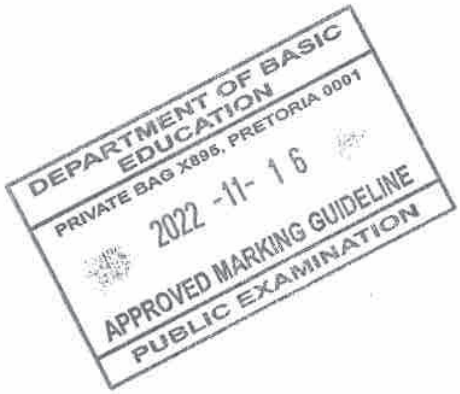
Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*	**OR/*OF***	
	1 Person flushes/ *spoel* 4 × 28 = 112 times a month/*keer per maand* That is/*dit is* 112 × 1,6 gal = 179,2 gallons/*gelling* Volume = 179,2 × 3,785 = 678,272 ℓ ✓C Family of 5 volume/ *familie van 5* ✓MA Volume = 678,272 ℓ × 5 = 3 391,36 ℓ ✓CA	1C conversion 1MA multiplication 1CA simplification	
	OR/*OF*	**OR/*OF***	
	The family flushes /*die familie spoel* 4 × 5 × 1,6 gal = 32 gal / day Volume = 32gal/day × 3,785 = 121,12 gal/day ✓C For the month /*vir 'n maand* ✓MA Volume = 121,12 gal/day × 28 days = 3 391,36 ℓ ✓CA	1C conversion 1MA multiplication 1CA simplification	
	OR/*OF*	**OR/*OF***	
	Toilet flushed in Feb/ *Spoel in Feb* = 5 × 4 ×28 = 560 ✓C ✓MA Volume = 1,6 × 3,785 × 560 = 3 391,36 ℓ ✓CA	1C conversion 1MA multiplication 1CA simplification (3)	
3.2.2*	✓✓O Restrict the volume of water flowing into the cistern *Verminder die volume water wat in die spoelbak invloei* **OR/*OF*** Repair all the leaks/*Maak alle lekplekke reg* ✓✓O **OR/*OF*** ✓✓O Place a brick into the cistern/*Sit 'n baksteen in die spoelbak* **OR/*OF*** ✓✓O Install a newer model / *Installeer 'n nuwer model*	2O any valid way to reduce volume of water in the cistern (2)	M L4 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
3.3.1	✓MA ✓MA 17:30 – 15 min – 40 min – 40 min ✓CA = 15:55	1MA subtracting 15 min from 17:30 1MA subtracting two cooking times 1CA simplification **AO** (3)	M L2 M
3.3.2	$°C = (°F - 32°) \times \frac{5}{9}$ $= (325 - 32) \times \frac{5}{9}$ ✓SF = 162,777.. ✓CA ≈ 160°C ✓R	1SF correct substitution 1CA simplification 1R rounding **AO** (3)	M L2 E
3.3.3*	✓M $4\frac{1}{4} \times 2 = 8\frac{1}{2}$ cups/*koppies* ✓A 250 ml = 0,25 ℓ ✓C Number of litres/*Hoeveelheid liter* $= 8\frac{1}{2} \times 0{,}25\ \ell = 2{,}125\ \ell$ ✓CA **OR/*OF*** 1 cup/*koppie* = 250 mℓ 4 cups /*koppies* = 4 × 250 mℓ = 1 000 mℓ ✓MA ¼ cup/*koppie* = ¼ × 250 mℓ = 62,5 mℓ For 1 tart she needs /*vir 1 tert benodig sy* = 1 000 + 62,5 = 1 062,5 mℓ ✓A For 2 tarts/*vir 2 terte* = 1 062,5 mℓ × 2 = 2 125 mℓ ✓C = 2,125 ℓ ✓CA **OR/*OF*** ✓MA 1 tart /*tert* : $4\frac{1}{4} \times 250$ mℓ = 1 065,5 mℓ ✓A 2 tarts /*terte*: 1 065,5 mℓ × 2 = 2 125 mℓ ✓C Total /*totaal:* 2 125 mℓ ÷ 1 000 = 2,125 ℓ ✓CA	1M multiplying with 2 1A total cups 1C convert to litre 1CA simplification **OR/*OF*** 1MA multiplying with 250 1A milk needed for 1 tart 1C convert to litre 1CA simplification **OR/*OF*** 1MA multiplying with 250 1A milk needed for 1 tart 1C convert to litre 1CA simplification	M L3 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*	**OR/*OF***	
	$4¼ = \frac{17}{4}$ cups /*koppies*		
	For 1 tart/ *vir 1 tert*		
	$\frac{17}{4} \times 250$ mℓ ✓MA $= 1\,062{,}5$ mℓ ✓C $= 1{,}0625$ ℓ ✓A	1MA multiplying with 250 1C convert to litre 1A milk needed for 1 tart	
	Milk for 2 tarts /*Melk vir 2 terte*		
	$= 1{,}0625$ ℓ $\times 2 = 2{,}125$ ℓ ✓CA	1CA simplification	
	OR/*OF*	**OR/*OF***	
	✓MA ✓A $4¼ \times 2 \times 250$ mℓ $= 2\,125$ mℓ ✓CA $= 2{,}125$ ℓ ✓C	1MA multiplying with 2 1A total cups 1CA simplification 1C convert to litre	
	OR/*OF*	**OR/*OF***	
	✓MA ✓A $4{,}25 \times 2 = 8{,}5$ cups/*koppies* 1 cup /*koppie* = 250 mℓ 8,5 cups /*koppies* = x $x = \frac{8{,}5\ cups}{1\ cup} \times 250$ mℓ $= 2\,125$ mℓ ✓CA $= 2{,}125$ ℓ ✓C	1MA multiplying with 2 1A total cups 1CA simplification 1C convert to litre	
	OR/*OF*	**OR/*OF***	
	✓MA $2(4 \times 250) = 2\,000$ mℓ $2(\frac{1}{4} \times 250) = 125$ mℓ ✓A Total/*Totaal* $= 2\,125$ mℓ ✓CA $= 2{,}125$ ℓ ✓C	1MA multiplying with 2 1A total cups 1CA simplification 1C convert to litre	
		(4)	
		[29]	

QUESTION/*VRAAG* 4 [32 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
4.1.1	The total length/*Totale lengte* ✓MA = 19 cm + 23 cm + 10 cm + 25 cm + 23 cm + 41 cm = 141 cm ✓CA = 1 410 mm ✓C ≈ 1 500 mm	1MA adding correct values 1CA simplification 1C conversion (3)	MP L2 M
4.1.2	The 2 sides are against the back which is 14 cm wide. The thickness of the boards is 20 mm *Die 2 sykante is teen die agterkant wat 14 cm breed is. Die dikte van die plank is 20 mm* Floor against the Back/*Vloer teen die agterkant* = 14 cm – 20 mm – 20 mm ✓MA = 14 cm – 2 cm – 2 cm ✓C = 10 cm ✓A ✓O His statement is correct/*Sy bewering is korrek* **OR/*OF*** If the 10 cm side goes against the back: *Indien die 10cm teen die rugkant is:* ✓MA 14 cm – 10 cm = 4 cm is left on the sides/*bly oor vir die kante* ✓A 4 cm ÷ 2 = 2 cm on each side /*elke kant.* Board thickness/*plank dikte* = 20 mm = 2 cm ✓C His statement is correct./ *Sy bewering is korrek* ✓O **OR/*OF*** Thickness of the board / *dikte van die plank* = 20 mm = 2 cm ✓C ✓MA 10 cm + 2 cm + 2 cm = 14 cm ✓A His statement is correct./ *Sy bewering is korrek* ✓O	1MA subtracting 1C conversion 1A simplification 1O verification **OR/*OF*** 1MA subtracting 1A simplification 1C conversion 1O verification **OR/*OF*** 1C conversion 1MA adding 1A simplification 1O verification	MP L4 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*	**OR/*OF***	
	The thickness of each side / *dikte aan elke kant* = 2 cm ✓C Floor against the back side / *Vloer teen rugkant* = (14 cm – 10 cm) ÷ 2 ✓MA = 4 cm ÷ 2 = 2 cm ✓A His statement is correct. / *Sy bewering is korrek* ✓O	1C conversion 1MA subtracting 1A simplification 1O verification (4)	
4.1.3	Area of rectangle/*Oppervlakte van reghoek* = 23 cm × 14 cm ✓SF = 322 cm^2 ✓A Radius of the hole /*Radius van opening* = 4,2 cm ÷ 2 = 2,1 cm ✓A Size of the hole / *Grootte van opening* = 3,142 × (2,1)^2 ✓SF = 13,85622 cm^2 ✓CA Exposed front area / *Voorste buite oppervlakte* = 322 cm^2 – 13,85622 cm^2 = 308,14378 cm^2 ✓CA	1SF correct values 1A simplification 1A radius value 1SF substitution 1CA simplification 1CA simplification **NPR** (6)	M L3 D



Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
4.2	Coat/*Laag* 1: 10 m^2 use 1 ℓ 0,2888 m^2 needs n ℓ $n = \frac{0,2888}{10}$ ℓ ✓MA = 0, 02888 ℓ ✓A	1MA ratio 1A simplification	M L4 D
	Coat/*Laag* 2: 14 m^2 use 1 ℓ 0,2888 m^2 needs n ℓ $n = \frac{0,2888}{14}$ ℓ = 0, 0206285… ℓ ✓A	1A simplification	
	Total for 3 coats/*Totaal vir 3 lae* = 0,02888 + 2 × 0, 0206285.. ℓ ✓MCA = 0,070137… ℓ ✓CA	1MCA adding 3 values 1CA simplification	
	Number of birdhouses with 500 m ℓ *Getal voëlhuisies met 500 mℓ* $= \frac{0,500}{0,070137}$ ✓MCA ≈ 7 ✓CA	1MCA dividing converted values 1CA simplification	
	His statement is correct/*Sy bewering is korrek* ✓O	1O conclusion	
	OR/*OF*	**OR/*OF***	
	Coat/*Laag* 1: 10 m^2 use 1 ℓ 0,2888 m^2 needs n ℓ $n = \frac{0,2888}{10}$ ℓ ✓MA = 0, 02888 ℓ ✓A	1MA ratio 1A simplification	
	Coat/*Laag* 2: 14 m^2 use 1 ℓ 0,2888 m^2 needs n ℓ $n = \frac{0,2888}{14}$ ℓ = 0, 0206285… ℓ ✓A	1A simplification	
	Total for 3 coats /*Totaal vir 3 lae* = 0,02888 + 2 × 0, 0206285.. ℓ ✓MCA = 0,070137… ℓ ✓CA	1MCA adding 3 values 1CA simplification	
	For 7 birdhouses/*Vir 7 voëlhuisies* = 0,070137 × 7 ✓MCA = 0,490959 = 490 mℓ ✓CA His statement is correct/*Sy bewering is korrek.* ✓O	1MCA multiplying by 7 1CA number of millilitres 1O conclusion	

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*	**OR/*OF***	
	Total area for 7 birdhouses /*Totale oppervlakte vir 7 voëlhuisies* = $7 \times 0{,}2888\ m^2 = 2{,}0216\ m^2$ ✓MA	1MA multiplying by 7	
	1st coat/*laag*: 1 ℓ covers/*bedek* $10\ m^2$ n ℓ covers /*bedek* $2{,}0216\ m^2$ $n = \frac{2{,}0216}{10} = 0{,}20216\ \ell$ ✓MA ✓A	1MA ratio 1A simplification	
	2nd coat/*laag*: 1 ℓ covers/*bedek* $14\ m^2$ x ℓ covers/*bedek* $2{,}0216\ m^2$ $x = 0{,}1444\ \ell$ ✓A	1A simplification	
	and 3rd coat/*laag* = 0,1444 ℓ Total paint needed /*totale hoeveelheid verf nodig* = 0,20216 ℓ + 0,1444 ℓ + 0,1444 ℓ ✓MCA = 0,49096 ℓ ✓CA = 490,96 mℓ ✓CA Correct /*korrek* ✓O	1MCA adding 3 values 1CA simplification 1CA number of millilitres 1O conclusion (8)	
4.3.1 (a)	Rental + Transport/*Huur en vervoer* = R250 + R100 ✓RT ✓MA = R350	1RT correct values 1MA adding correct values (2)	M/F L1 E
4.3.1* (b)	Wooden boards each/*Houtplanke elk* $= \frac{R287{,}40}{6} = R47{,}90$ ✓MA Total cost for one/*Totale koste vir een* p = R47,90 + R21,40 + R10,70 ✓MCA = R80 ✓CA	1MA unit price 1MCA adding ALL correct values 1CA simplification (3)	M/F L2 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
4.3.2*	✓✓ A Break-even point is when the **expenses** for making, transporting the birdhouses and renting the stall **is equal** to the **income** from selling the birdhouses. *Gelykbreekpunt is waar die uitgawes vir die maak, vervoer en huur van die stalletjie is gelyk aan die inkomste uit die verkoop van die voëlhuisies.* **OR/*OF*** ✓✓ A Break-even point is where the number of birdhouses sold equals the expense (cost) to make the birdhouses. *Gelykbreekpunt is waar die getal voëlhuisies wat verkoop word gelyk is aan die uitgawes (kostes) om hulle te maak* **OR/*OF*** ✓✓ A In this context he must make and sell 5 birdhouses and his expense and income will both be R750 *In hierdie konteks moet hy 5 voëlhuisies maak en verkoop en sy uitgawes en inkomstes is beide R750*	2A correct explanation (2)	M/F L1 E
4.3.3*	Expense for/*Uitgawe vir* 15 is R1 550 ✓RT Income/*Inkomste* 12 is R1 800 ✓RT ✓A Profit /*Wins* = R1 800 – R1 550 = R250 ✓CA **OR/*OF*** Income from selling /*Inkomste uit verkoop van 12* = R150 × 12 = R1 800 ✓A Expense for making 15 / *Uitgawes om 15 te maak* = R350 + R80 × 15 = R1 550 ✓A ✓A He makes a profit / *Hy maak 'n wins* R1 800 – R1 550 = R250 ✓CA	1RT expense 1RT income 1A profit 1CA simplification **OR/*OF*** 1A income 1A expense 1A profit 1CA simplification (4)	M/F L3 M
		[32]	

QUESTION/*VRAAG* 5 [26 MARKS/*PUNTE*]

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
5.1	**Location/*Plek*** | **Detail/*Besonderheid*** 01 | a 02 | f ✓A 03 | b ✓A 04 | d ✓A 05 | c ✓A 06 | e **OR/*OF*** 02. Pass Kamakura /*ry deur Kamakura* ✓A 03. Visit Mount Fuji / *besoek Fuji* ✓A 04. Visit the Wooden Temple / *Hout tempel* ✓A 05. Visit the Aquarium / *grootste akwarium* ✓A **OR/*OF*** (a) – 01 (b) – 03 ✓A (c) – 05 ✓A (d) – 04 ✓A (e) – 06 (f) – 02 ✓A	1A 1st correct one 1A 2nd correct one 1A 3rd correct 1A last correct **OR/*OF*** 1A 1st correct one 1A 2nd correct one 1A 3rd correct 1A last correct **OR/*OF*** 1A 1st correct one 1A 2nd correct one 1A 3rd correct 1A last correct (4)	MP L2 M
5.2.1*	2022 – 1707 = 315 years/*jaar* ✓A Number of decades/*Getal dekades* $= \frac{315}{10}$ ✓A = 31,5 ✓CA	1A number of years 1A decade 1CA simplification (3)	M L2 M
5.2.2	Nov: 30 – 11 = 19 ✓A days/*dae* Dec: 15 days ✓A Elapsed days between/*Verloopte dae tussen* = 19 + 15 = 34 ✓CA **OR/*OF*** From/*van* 12 Nov to/*tot* 11 Dec = 30 days/*dae* ✓A From /*van* 12 Dec to /*tot* 15 Dec = 4 days *dae* ✓A Total days between /*Totale dae tussen* = 30 + 4 = 34 ✓CA	1A days in Nov 1A number of days in Dec 1CA total number of days **OR/*OF*** 1A number of days in Nov 1A days in Dec 1CA total number of days (3)	M L1 E

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
5.3.1*	150 : 250 ✓A ✓CA = 3 : 5	1A correct values and order 1CA simplification (2)	M L1 E
5.3.2	1 m = 3,281 feet/*voet* Height = $\frac{1\,092{,}1916\ feet}{3{,}281\ feet\ per\ metre}$ ✓MA ≈ 332,884 m ✓CA	1MA dividing 1CA simplification **NPR** (2)	M L2 E
5.3.3*	% discount/*afslag* = $\frac{\text{discount amount}}{\text{original price}} \times 100\%$ ✓MA = $\frac{1\,200-960}{1\,200} \times 100\%$ ✓RT ✓A = $\frac{240}{1\,200} \times 100\%$ ✓A = 20 % ✓CA His statement is incorrect/*Sy bewering is verkeerd.* ✓O **OR/*OF*** Percentage /*Persentasie* = $\frac{960}{1\,200} \times 100\%$ ✓RT ✓MA ✓A = 80% ✓A Percentage discount /*Persentasie afslag* = 100% – 80% = 20% ✓CA Incorrect / *verkeerd* ✓O **OR/*OF*** Discount /*afslag* = 30% × 1 200 = 360 yen ✓MA ✓RT ✓A Discounted amount should be /Afslag moes wees: 1 200 – 360 = 840 yen ✓MA ✓CA Incorrect / *verkeerd* ✓O	1MA percentage calculation 1RT correct values 1A denominator 1A numerator 1CA simplification 1O verification **OR/*OF*** 1MA percentage calculation 1RT correct values 1A denominator 1A simplification 1CA simplification 1O verification **OR/*OF*** 1MA percentage calculation of correct values 1RT correct values 1A simplification 1MA subtracting 1CA simplification 1O verification	M L4 M

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF* Difference in ticket price / *Verskil in kaartjie pryse* ✓RT ✓MA ✓A = 1 200 – 960 = 240 yen ✓MA Discount /*afslag* = 30% × 1 200 = 360 yen ✓A Incorrect / *verkeerd* ✓O ✓MA **OR/*OF*** 100% – 30% = 70% ✓A Discounted Amount /*Bedrag na afslag* ✓MA ✓RT $= \frac{70}{100} \times 1\,200$ = 840 yen ✓A His statement is incorrect, the price for adults is 960 yen ✓O *Sy bewering is nie korrek want die bedrag vir volwassenes is 960 jen*	**OR/*OF*** 1RT correct values 1MA subtracting 1A simplification 1MA percentage calculation 1A simplification 1O verification **OR/*OF*** 1MA subtracting 1A simplification 1RT correct values 1MA percentage calculation 1A simplification 1O verification (6)	
5.4	Duration of the trip/*Duur van rit* = 12:03 – 8:06 = 3 h 57 min ✓A Total stopping time/*Totale tyd van stoppe* = 8 × 4 min = 32 min ✓A Time that the train was moving/ *Tyd wat trein beweeg* = 3 h 57 min – 32 min = 3 h 25 min ✓CA Distance = speed × time *Afstand = spoed × tyd* 816 km = speed × 3 h 25 min ✓SF Speed/*Spoed* $= \frac{816\text{ km}}{3\text{ h }25\text{ min}} = \frac{816\text{ km}}{3{,}416667h}$ ✓S = 238,83 km/h ✓CA	1A duration 1A total stopping time 1CA travelling time 1SF substitution 1S change of subject of the formula 1CA simplification	M L3 D

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*	**OR/*OF***	
	Duration of the trip/*Duur van rit* = 12:03 – 8:06 = 3 h 57 min = 237 min ✓A	1A duration	
	Total stopping time/*Totale tyd van stoppe* = 8 × 4 min = 32 min ✓A	1A total stopping time	
	Time that the train was moving/ *Tyd wat trein beweeg* = 237 min – 32 min = 205 min ✓CA	1CA travelling time	
	Distance = speed × time *Afstand = spoed × tyd* 816 km = speed × 205 min ✓SF	1SF substitution	
	Speed/*Spoed* = $\frac{816 \text{ km}}{205 \text{ min}}$ ✓S	1S change of subject of the formula	
	≈ 3,980487.. km/min ✓CA	1CA simplification **NPR** (6)	
		[26]	
		TOTAL: 150	

Mathematical Literacy P2 Analasys Grid Nov 2022

	Maps	Meas	Prob	L1	L 2	L 3	L 4	Total		Difficulty level E	M	D
1.1.1		2		2				2		2		
1.1.2		3		3				3		3		
1.1.3		2		2				2		2		
1.1.4		2		2				2		2		
1.1.5		2		2				2			2	
1.2.1	2			2				2		2		
1.2.2	2			2				2			2	
1.2.3	2			2				2		2		
1.3.1	2			2				2		2		
1.3.2	2			2				2		2		
1.3.3	2			2				2		2		
1.3.4	2			2				2		2		
1.3.5	2			2				2	27	2		
2.1.1	2						2	2			2	
2.1.2	3				3			3		3		
2.1.3	2				2			2	36	2		

2.1.4	2						2	2		2		
2.1.5	3					3		3			3	
2.1.6	3						3	3			3	
2.2.1			2	2				2		2		
2.2.2			4		4			4		4		
2.2.3			2	2				2		2		
2.2.4			3		3			3			3	
2.3.1	2			2				2		2		
2.3.2	2						2	2			2	
2.3.3(a)	2						2	2			2	
2.3.3(b)	2			2				2		2		
2.3.4	2				2			2			2	
3.1.1		3			3			3		3		
3.1.2		3			3			3		3		
3.1.3a		4				4		4			4	
3.1.3b		4				4		4			4	
3.2.1		3				3		3			3	
3.2.2		2					2	2		2		
3.3.1		3			3			3			3	
3.3.2		3			3			3		3		
3.3.3		4				4		4	29		4	
4.1.1	3				3			3			3	
4.1.2	4						4	4				4
4.1.3		6				6		6				6
4.2.2		8					8	8				8
4.3.1a		2		2				2		2		
4.3.1b		3			3			3	32		3	
4.3.2		2		2				2		2		
4.3.3		4				4		4			4	
5.1	4				4			4			4	
5.2.1		3			3			3			3	
5.2.2		3		3				3		3		
5.3.1		2		2				2		2		
5.3.2		2			2			2		2		
5.3.3		6					6	6			6	
5.4		6				6		6	26			6
	52	87	11	44	41	34	31	150	150	64	62	24
	34.7	58.0	7.3	29.3	27.3	22.7	20.7	100.0		42.7	41.3	16.0
Target	**40%**	**55%**	**5%**	**30%**	**30%**	**20%**	**20%**	**100%**		40%	40%	20%

	NOTES	
1.1.2	Digital and Analogue *Digitaal en Analoog*	2 marks
1.1.3	Twelve forty-five in the afternoon Forty-five minutes past 12 in the afternoon	2 marks
1.1.4	If B & E is written Correct times - 12:45 & 16:45	1 mark
1.2.3	Screw/s	2 marks
1.3.2	Free State	2 marks
1.3.4	Listing only all 7 names	1 mark
2.1.3	Accept **6**	1 mark
2.1.4	Accept Decorating purposes For people to take pictures Health reasons Outside for people who smoke	2 marks
2.1.6	Accept Invalid –only when they wrote following explanation: There are 21 tables because table 18 is made up of two × 3 - seater tables (Table 13 and Table 18)	3 marks
2.2.3	Options listed BVI BVM BSI BSM	1 mark
2.2.4	$\frac{2}{4} \times 100\% = 50\ \%$	3 marks
2.3.2	Free hand sketch	2 marks
2.3.3 (a)	The bridges are indicated with the number 10 and 110 on each side of the streets.	2 marks
2.3.3 (b)	Accept 5	2 marks
3.2.1	If ONE value is missing 1,6 × 4 × 28 = 179,2 gallons; 179,2 × 3,785 = 678,272 ℓ 1,6 × 4 × 5 = 32 gallons; 32 × 3,785 = 121,12 ℓ 1,6 × 28 × 5 = 224 gallons; 224 × 3,785 = 847,84 ℓ	2 marks

3.2.2	Practical examples to restrict flow into the cistern are e.g. - Bend the arm that carries the float down - push the handle up before all the water runs out. - short flush Flush less	2 marks
3.3.3	Failure to multiply by 2	3 marks
4.3.1 (b)	Accept: Expenses = R350 + p × number R430 = R350 + p × 1 p = R430 – R350 = R80	3 marks
4.3.2	At break-even no profit or loss is made.	2 marks
4.3.3	Showing Income = R1 800 and Expense = R1 550 and concluding profit without the calculation	4 marks
5.2.1.	Accept 31 and 32	3 marks
5.3.1	Accept ratio simplified to 1:1,67 or 0,6 : 1 or $\frac{3}{5}$	2 marks
5.3.3	**Accept correct answers if multiplied with 60. E.g.** 1 200 × 60 = 72 000 yen 960 × 60 = 57 600 yen % discount / *afslag* = $\frac{72\,000 - 57\,600}{72\,000} \times 100\%$ ✓RT ✓A ✓MA ✓A = 20% ✓CA ✓O His statement is wrong / *Sy bewering is nie korrek nie* **OR/*OF*** 1 200 × 60 = 72 000 yen ✓RT 960 × 60 = 57 600 yen 30% × 72 000 yen = 21 600 yen ✓MA ✓A 72 000 yen – 21 600 yen ✓MA = 50 400 yen ✓A His statement is wrong / *Sy bewering is nie korrek nie* ✓O	6 marks