basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE/*NASIONALE SENIOR SERTIFIKAAT*

GRADE/GRAAD 12

MATHEMATICAL LITERACY P2/ *WISKUNDIGE GELETTERDHEID V2*

NOVEMBER 2021

MARKING GUIDELINES/*NASIENRIGLYNE*

MARKS/*PUNTE*: 150

SYMBOL/*KODE*	EXPLANATION/*VERDUIDELIKING*
M	Method/*Metode*
MA	Method with accuracy/*Metode met akkuraatheid*
CA	Consistent accuracy/*Volgehoue akkuraatheid*
A	Accuracy/*Akkuraatheid*
C	Conversion/*Herleiding*
S	Simplification/*Vereenvoudiging*
RT	Reading from a table/graph/map/diagram/*Lees vanaftabel/kaart/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./*Penalisering, bv. vir geen eenhede/verkeerde afronding, ens.*
R	Rounding off/*Afronding*
NPR	No penalty for correct rounding minimum two decimal places/*Geenpenaliseringvir korrekte afronding tot twee desimale plekke nie*
AO	Answer only/*Slegs antwoord*
MCA	Method with constant accuracy/*Metode met volgehoue akkuraatheid*

These marking guidelines consist of 19 pages.
Hierdienasienriglynebestaanuit19 bladsye.

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.

LET WEL:
- *As 'n kandidaat 'n vraag TWEE KEER beantwoord, merk slegs die EERSTE poging.*
- *As 'n kandidaat 'n antwoord van 'n vraag doodtrek (kanselleer) en nie oordoen nie, merk die doodgetrekte (gekanselleerde) poging.*
- *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 merkbeginsel is dat indien 'n kandidaat een fout maak en daarna voortgaan met korrekte wiskunde, dat die kandidaat slegs een punt verloor.*

QUESTION/*VRAAG* 1 [29 MARKS/*PUNTE*]Answer Only AO - full marks			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
1.1.1	Total mass/*Totale massa* = 6 × 110g ✓MA = 660 g ✓A	 1MA multiply mass by 6 1A mass (2)	M L1
1.1.2*	Radius = 32 mm ✓✓A	2A radius (2)	M L1
1.1.3	A ✓✓A	2A correct letter [accept: mm^3] (2)	M L1
1.1.4*	Total No. of days/*Totale getal dae* = 11 Jan to 31 Mar ✓ MA = (31 – 10) + 28 + 31 ✓ MCA = 21 + 28 + 31 = 80 ✓CA	 1MA days in Jan 1MCA adding days in 3 months 1CA simplification (3)	M L1

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
1.1.5*	Price for 2 Pringles/*Prys vir 2 Pringles* $= 2\left(\frac{R100}{6}\right)$ ✓ MA $= 2 \times R16,666$ = R33,33✓ CA	1MA dividing price by 6 and multiplying by 2 1CA simplification **NPR** (2)	M/F L1
1.2.1	A ✓✓ A	2A correct letter (2)	M L1
1.2.2	D ✓✓ A	2A correct letter Accept 60 km/h (2)	M L1
1.3.1	7,3 m = 7,3 × 100 cm ✓ MA = 730 cm ✓A	1MA multiplying correct value by 100 1A simplification (2)	M L1
1.3.2*	D = 7,3 m – 5,2 m ✓ MA = 2,1 m✓ CA	1MA difference of correct lengths 1CA simplification (2)	M L1
1.3.3	0,5m ✓✓A	2A height (2)	M L1
1.4.1*	✓A A layout plan is a top view that shows the arrangement of features. ✓A *'n Uitlegplan is die bo-aansig wat die rangskikking van die voorwerpe aantoon.* **OR/*OF*** A layout plan is the structural arrangement of items within a certain space. *'n Uitlegplan is die strukturele rangskikking van items binne 'n bepaalde ruimte.* **OR/*OF*** Plan of the entire inside cabin, showing location of seats, exit doors etc. *'n Plan van die hele binnekant van die kajuut wat die posisie van sitplekke, uitgang, deure ens. aantoon* **OR/*OF*** Drawing to scale showing physical arrangements of all resources that consume space within facilities. *'n Skaaltekening wat die fisiese posisies van al die items van spasie in beslag neem binne die fasiliteit*	2Aexplanation (2)	MP L1

Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
1.4.2*	28 ✓✓A	2A number of seats (2)	MP L1
1.4.3	✓ A✓A G1	1A correct seat 1A correct row (2)	MP L1
1.4.4*	6 ✓✓ A	2A correct number (2)	P L1
		[29]	

QUESTION/*VRAAG* 2 [24MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
2.1	3 ✓✓A	2A correct number (2)	MP L2
2.2	Living room/*Woonkamer* ✓✓A	2A correct room (2)	MP L1
2.3	North East or NE/*Noordoos of NO* ✓✓A	2A direction (2)	MP L2
2.4*	$P_{\text{not interior/nie binne}} = P_{\text{exterior/buite}}$ $= \frac{2}{6}$ ✓✓RT ✓A $= \frac{1}{3}$ ✓CA **OR/*OF*** ✓MA $P_{\text{not interior/nie binne}} = 1 - \frac{4}{6}$ ✓RT ✓A $= \frac{2}{6}$ $= \frac{1}{3}$ ✓CA	2RT numerator 1A denominator 1CA simplification **OR/*OF*** 1MA probability of NOT 1RT numerator 1A denominator 1CA simplification (4)	P L2
2.5	✓A ✓✓O Jan is wrong, the kitchen is on the Southern side.In South Africa it does not get a lot of sun. *Jan is verkeerd. Die kombuis is aan die suidlike kant. In Suid-Afrika kry dit nie baie son nie.*	1A wrong 2O reasoning (3)	MP L4
2.6	It cannot be the view showing the kitchen and dining room, as it does not show the extra window for the bathroom. ✓✓O *Dit kannie die kombuis en eetkamer wees nie want dit wys nie die venster van die badkamer nie.* It does not show the other rooms on both sides of the windows. *Dit wys nie die ander kamers weerskante van die vensters nie.* **OR/*OF*** It shows the veranda, door, bedroom and livingroom windows. *Dit wys die stoep, deur en slaapkamer en woonkamervensters.* **OR/*OF***	2O reason	MP L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF* Because there is no veranda on the side of the kitchen and the picture shows the veranda. *Daar is nie 'n stoep aan die kombuis se kant nie en die prent toon 'n stoep* OR/*OF* The drawing shows the SE elevation and the kitchen is on the SW side. *Die prent toon die SO aansigen die kombuis is aan die SW kant.* OR/*OF* The windows shown does not look like kitchen windows, they are too big. *Die vensters wat aangetoon word lyk nie soos kombuisvensters nie, hulle is te groot* OR/*OF* The drawing represents the front view. *Die prent is die vooraansig* OR/*OF* Kitchen should be on the left-hand side with the window and door / The door knob is on the right-hand side and not on the left-hand side of the door adjacent to the kitchen window. *Kombuis moet aan die linkerkant met die vensterendeur wees / Die deurknop is aan die regterkant en nie aan die linkerkant van die deur wat grens aan die kombuisvenster nie.*	(2)	
2.7.1*	10 mm : 1 000 mm ✓A = 1 : 100 ✓CA **OR/*OF*** 1 cm : 100 cm ✓A = 1 : 100 ✓CA	1A correct ratio and conversion 1CA simplification **OR/*OF*** 1A correct ratio and conversion 1CA simplification **AO** (2)	MP L2
2.7.2	✓A Length on floor plan/*Lengte op die vloerplan* = 4,4 cm 1 cm = 100 cm 4,4 cm = 4,4 × 100 cm ✓MCA = 440 cm ✓CA = 4,4 m ✓C **OR/*OF***	CA from 2.7.1 1A correct measurement 1MCA using the scale 1CA simplification 1C conversion Accept 4,3 m to 4,5 m	MP L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	1 cm is 1 000 mm ✓A 4,4 cm is 4 400 mm ✓MCA ✓CA 4 400 mm = 4,4 m ✓C **OR/*OF*** 1cm : 1 000 mm ✓MCA 1cm : 1 m ✓C ✓A 4,4 cm : 4,4 m ✓CA	1A correct measurement 1MCA using the scale 1CA simplification 1C conversion **OR/*OF*** 1MCA using the scale 1C conversion 1A correct measurement 1CA simplification (4)	
2.7.3	Jan is correct. ✓A ✓✓O When a photocopy is made the size of the plan may change while the number scale remains the same. *Jan is korrek.* *Wanneer jy 'n fotostaat maak, kan die grootte van die plan verander en die getalskaal bly dieselfde*	1A opinion 2O verification (3)	MP L4
		[24]	

QUESTION/*VRAAG* 3 [35 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T/L**
3.1.1	✓RT ✓MA **A** = 162 cm + 1,5 cm + 1,5 cm = 162 cm + (1,5 cm × 2) = 165 cm ✓CA	1RT inside length 1MA adding both sides 1CA simplification (3)	M L1
3.1.2*	✓RT ✓MA **B** = 80 cm – (40 cm + 4,5 cm + 1,5 cm + 1,5 cm) = 32,5 cm ✓CA	1RT both heights 1MA subtracting 1CA simplification (3)	M L1
3.2	31,496 inches/*duim* = 80 cm ✓RT 1 inch/*duim* = $\frac{80}{31,496}$ cm ✓MA = 2,54 cm ✓A	1RTheight 80 cm 1MA dividing by 31,496 1A simplification (3)	M L2
3.3.1	Area of a rectangle = length × width *Opp van 'n reghoek = lengte × breedte* = 165 cm × 80 cm ✓MCA = 13 200 cm^2 ✓CA	CA from 3.1.1 1MCA substitution 1CA simplification (2)	M L2
3.3.2*	Area of a rectangle = 13 200 cm^2 = $\frac{13200}{(100)^2}$ m^2 ✓MCA = 1,32 m^2 ✓CA or Area = 1,65×0,8 =1,32 m^2	CA from 3.3.1 1MCA dividing by 100^2 or 10 000 1CA simplification AO (2)	M L2
3.3.3	1ℓ covers/*bedek* 6,9 m^2 *n* ℓ covers/*bedek* 1,32 m^2 *n* = $\frac{1,32}{6,9}$ ✓MA = 0,1913… ℓ ✓CA To paint three coats/ *Om drie lae te verf* ✓MA 0,1913... ℓ × 3 = 0,57 ℓ ✓CA ✓R	CA from 3.3.2 1MA dividing by 6,9 1CA simplification 1MA multiplying with 3 1CA simplification 1R rounding	M L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*		
	Total area to cover / *Totale oppervlakte om te dek* ✓MA $= 1{,}32\ m^2 \times 3 = 3{,}96\ m^2$ ✓CA	1MA multiplying with 3 1CA simplification	
	$1\ \ell$ covers/*bedek* $6{,}9\ m^2$ $x\ \ell$ covers /*bedek* $3{,}96\ m^2$ ✓MA $x = \frac{3{,}96}{6{,}9} = 0{,}57\ \ell$ ✓CA ✓R	1MA dividing by 6,9 1CA simplification 1R rounding	
	OR/*OF*	**OR/*OF***	
	Paint needed/*Verfbenodig* ✓MA $= \frac{1{,}32 \times 2}{6{,}9}\ell + \frac{1{,}32}{6{,}9}\ell$ ✓MA ✓CA ✓CA $= 0{,}38\ \ell + 0{,}19\ \ell$ $= 0{,}57\ \ell$ ✓R	1MA dividing by 6,9 1MA adding the 2 coats and 1 1CA simplification 1CA simplification 1R rounding	
	OR/*OF*	**OR/*OF***	
	Total area to cover / *Totale oppervlakte om te dek* ✓MA ✓CA $= 1{,}32\ m^2 \times 3 = 3{,}96\ m^2$ Spread rate/ *Spreikoers* = $\frac{1\ell}{6{,}9\,m^2}$ ✓MA $= 0{,}144\ldots\ \ell/m^2$ Total amount of litres / *Totale aantal liters* $= 0{,}144 \times 3{,}96$ ✓CA $= 0{,}57\ \ell$ ✓R	1MA multiplying with 3 1CA simplification 1MA dividing by 6,9 1CA simplification 1R rounding	
	OR/*OF*	**OR/*OF***	
	Spread rate/ *Spreikoers* = $\frac{1\ell}{6{,}9\,m^2}$ ✓MA $= 0{,}144\ldots\ \ell/m^2$ Paint needed for 1 coat/ *Verf nodig vir 1 laag* $== 0{,}144 \times 1{,}32 = 0{,}19\ldots\ \ell$ ✓CA Paint needed for 3 coats/ *Verf nodig vir 3 lae* ✓MA $= 0{,}19.. \times 3$ ✓CA $= 0{,}57\ \ell$ ✓R	1MA dividing by 6,9 1CA simplification 1MA multiplying with 3 1CA simplification 1R rounding (5)	
3.3.4	$0{,}57\ \ell \times 1\ 000$ ✓MCA $= 570\ m\ell$ ✓CA Not valid ✓O *Nie geldig nie*	1MCA (from Q3.3.3 multiply by 1 000) 1CA simplification 1O verification	M L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	OR/*OF*	**OR/*OF***	
	500 mℓ ÷ 1 000 ✓MCA	1MCA (from Q3.3.3dividingby 1 000)	
	= 0,5 ℓ less than 0,57ℓ✓CA	1CA simplification	
	Tsidi's statement is invalid ✓O	1O verification	
	OR/*OF*	**OR/*OF***	
	1ℓ covers/*bedek* 6,9 m^2		
	500 mℓ covers/*bedek* $\frac{6,9}{2}$ = 3,45 m^2 ✓MCA	1MCAarea	
	✓CA		
	Area to paint / *Opp om te verf* = 1,32 m^2 × 3 = 3,96 m^2	1CA simplification	
	The paint is not enough / invalid ✓O *Die verfis nie genoeg / nie geldig*	1O verification	
	OR/*OF*	**OR/*OF***	
	Coverage per coat/*Dekking per laag* = $\frac{500 m\ell}{3} = \frac{0,5\ell}{3}$ = 0,166.. ✓MCA	1MCAdividing	
	Coverage /*Dekking*= 0,166 × 6,9 = 1,15 m^2 ✓CA	1CA simplification	
	1,32 m^2 needs to be covered per coat/*moet per laag gedek word.* Not valid / *Nie geldig nie* ✓O	1O verification (3)	
3.4.1*	Number of boxes/ *Getal bokse*		M L2 #
	= $\frac{162\,cm}{34,5\,cm}$ ✓MA ✓C	1MA dividing 1C conversion	
	= 4,695… ✓CA	1CA simplification	
	∴ 4 boxes ✓R	1R rounding down	
	OR/*OF*	**OR/*OF***	
	Number of boxes/ *Getal bokse*		
	= $\frac{1\,620\,mm}{345\,mm}$ ✓C ✓MA	1C conversion 1MA dividing	
	= 4,695… ✓CA	1CA simplification	
	∴ 4 boxes ✓R	1R rounding down (4)	

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
3.4.2	Number of single files/ *Getal enkel lêers* $= \frac{162\,\text{cm}}{8{,}1\,\text{cm}}$ ✓MA = 20 ✓A Number of files in boxes /*Getal lêers in 'n boks* = 4 × 4 ✓RT = 16 ✓CA Difference in the number of files/*Verskil in getal lêers* = 20 – 16 = 4 ✓CA	CA number of boxes from 3.4.1 1MA dividing 1A simplification 1RT number of files in a box 1CA simplification 1CA difference in files (5)	M L3
3.4.3	Neater storage/ *Netjieser berging* ✓✓O **OR/*OF*** Files stand up straight/*Die lêers staan regop* **OR/*OF*** Prevents dust on documents in the files/ *Verhoed dat stof op die dokumente in die lêers kom.* **OR/*OF*** It is easier to separate the files accordingly. *Dit is makliker om haar lêers te verdeel* **OR/*OF*** To categorise /organise her files/*Dit is om haar lêers te katagoriseer /organiseer* **OR/*OF*** Prevent files from breaking/ damage/protect files *Verhoed dat lêers breek of beskadig/beskerm lêers*	2O reason (2)	M L4
3.4.4	$P = \frac{1}{16} \times 100\%$ ✓A ✓MCA = 6,25% ✓CA	CA denominator from 3.4.2 1A numerator 1MCA denominator 1CA simplification (3)	P L2
		[35]	

QUESTION/*VRAAG* 4 [33 MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.1.1	✓✓A Perennial garden bed./*Meerjarige tuinbeddings* **OR/*OF*** Compost / *Kompos*	2A correct feature (2)	MP L2
4.1.2	Water is scarce/*Water is skaars* **OR/*OF*** Rain water is free compared to tap water ✓✓O *Reënwater is gratis invergelyking met kraanwater* **OR/*OF*** Pay less water bills/*Betaal minder vir water* **OR/*OF*** Water storage/ *om water te stoor* **OR/*OF*** To save water for future use *Om water te spaar vir toekomstige gebruik* **OR/*OF*** To harvest rain water *Om reënwater op te gaar*	2A Reason (2)	MP L4
4.1.3	Greenhouse**roof/ gutters** / *Kweekhuis dak/geute* ✓O **OR/*OF*** Livestock Barn**roof/ gutters** / *Veestoor dak/geute* ✓O **OR/*OF*** Solar greenhouse**roof / gutters**/ *Sonkrag kweekhuis*	1A correct structure 1A 2nd correct structure Accept roof **and** gutter /pipe full marks (Any 2 structures) (2)	MP L4
4.1.4	✓RT ✓RT Area/*Oppervlakte* = $\frac{1}{2} \times 17{,}024\text{ m} \times 19{,}5\text{ m}$ = 165,984 m^2 ✓CA	1RT correct height 1RTcorrect base 1CAarea of a triangle NPR (3)	M L2
4.1.5	Option/*Opsie* A = R1 154 × 2 ✓MA = R2 308 ✓CA Option/*Opsie* B = R127,30 × 19 ✓MA = R2 418,70 ✓ CA Option A. ✓ O *Opsie A.*	1MA multiply by 2 1CA option A cost 1MA multiply by 19 1CA option B cost 1O best option (5)	MF L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
4.2	Volume = 3,142 × r^2 × height/*hoogte* ✓SF 5000 ℓ = 3,142 × r^2 × 220 cm ✓C 5000 000 = 691,24 × r^2 $\frac{5\,000\,000}{691,24} = r^2$ ✓M 7233,377698 = r^2 ✓S $\sqrt{7233,377698}$ = r ✓M 85,05 cm = r ✓CA	1SF substituting 5000 1C converting ℓ to cm^3 1M dividing by 691,24 1S simplification 1M finding square root 1CA radius value NPR (6)	M L3
4.3.1*	18 : 42 ✓A = 3 : 7 ✓CA	1A correct order and values 1CA only if one value is correct or reversed order (2)	MP L1
4.3.2	Height/*hoogte* = $\frac{42''}{12''}$ = 3,5 feet/*voet* ✓MA 3,28084 feet/*voet* = 1 000 mm ∴ 3,5 feet/*voet* = $\frac{3,5}{3,28084} \times 1\,000$ ✓C = 1 066,799…mm ✓CA **OR/*OF*** 3, 28084feet = 1 000mm 1 foot = n ✓MA n = 304,79999mm 1 foot = 12 inches Then 12 inches = 304,79999mm 1 inch = $\frac{304,79999mm}{12}$ ✓C = 25,39999 mm Therefore 42 inches = 42 × 25,39999mm = 1066, 7999mm = 1 066,8 mm ✓CA	1MA converting to feet 1C converting to mm 1CA simplification **OR/*OF*** 1MA converting to feet 1C converting to mm 1CA simplification NPR (3)	M L2

Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
4.3.3	(a) iii ✓A (b) i ✓A (c) ii ✓A	3A correct Roman numeral (3)	MP L1
4.3.4	Q ✓✓A	2A correct letter (2)	MP L1
4.3.5*	✓✓A The notch labelled S is placed against B and the notch labelled R is placed against C ✓A *Die sitplek word bo-op die kantspanstukke geplaas* *Die uitkeping S word op B geplaas en die uitkeping R word teen C geplaas.*	2A mentioning the position of the 1st notche 1A second notch (3)	MP L4
		[33]	

QUESTION/*VRAAG* 5 [29MARKS/*PUNTE*]			
Q/*V*	**Solution/*Oplossing***	**Explanation/*Verduideliking***	**T&L**
5.1.1 (a)	W ✓✓A	2A correct letter Accept $\left(\frac{50}{60}\right)$ (2)	M L1
5.1.1 (b)	Z ✓✓A	2A correct letter Accept Plymouth (2)	MP L2
5.1.2* (a)	Providence to Boston = 52 miles ✓✓RT Springfield to Worcester =55 miles ✓RT	2RT distance 1RT distance (3)	MP L2
5.1.2 (b)	Conditions or nature of the roads/*Toestand van die paaie* **OR/*OF*** Permissible speed or differing speed limits /*Toelaatbare spoed of verskillende spoedbekerkings* **OR/*OF*** ✓✓O Volume of traffic on the road/*Hoeveelheid verkeer op die pad* **OR/*OF*** Number of Traffic lights/*Aantal verkeers ligte* **OR/*OF*** Speed humps / Animals / Riots/Unrest/Protest *Spoedhobbels /diere / oproer/ onrus/ protes aksies*	2A opinion (2)	MP L4
5.1.3	A Newburyport ✓A B Lawrence ✓A C Boston ✓A D Worcester ✓A	1A Newburyport 1A Lawrence 1A Boston 1A Worcester (4)	MP L2

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T&L
5.1.4	Number of litres in 23 gallons/*Getal liter in 23 gelling* = 3,785 × 23 ✓ C = 87,055 litre ✓ S Cost of 87,055 litre/ *Prys vir 87,055 liter* = 87,055 × R15,97 = R1 390,27 ✓ CA Valid/ *Geldig*. ✓ O **OR/*OF*** Number of litres / *Getal liter* = $\frac{R1400}{R\ 15,97}$ = 87,664.. litre ✓ S Number of gallons / *Getal gellings* = $\frac{87,664}{3,785}$ ✓ C =23,16 gallons ✓ CA Can buy more with R1 400/*Kan meer koop met R 1400* Valid / *Geldig* ✓ O	1C gallons to litre 1S simplification 1CA cost of fuel 1O conclusion **OR/*OF*** 1S simplification 1C gallons to litre 1CA cost of fuel 1O conclusion **NPR** (4)	MF L4

Q/*V*	Solution/*Oplossing*	Explanation/*Verduidelik*	T/L
5.1.5	1 full tank of fuel/ 1*vol tenk* = 23 gallons /*gelling* He can travel/ *Hykan reis* = 23 × 18 = 414 miles ✓ A Distance/*afstand* ✓ RT Greenfield - Fitchburg = 49 miles/*myl* Number of trips on 1 full tank /*Getalritte met 1 voltenk* = $\frac{414}{49}$ ✓ MA = 8,448.. ✓ CA ∴ 8 trips on 1 full tank / *8 ritte met 1 voltenk* So, then he will fill tank back to 23 gallons *Dan hervulhy die tenk tot 23 gelling* Amount of fuel for 1 return trip/ *brandstofvir1heen-en-weer reis* = $\frac{98}{18}$ ✓ MA = 5,44 gallon ✓ CA ✓ MA ✓ CA Left in a tank is 23 – 5,44 = 17,56 gallons. *Oor in die tenk is 23 – 5,44 = 17,56 gelling* **OR/*OF*** ✓ RT Distance/*afstand*$_{\text{(Greenfield and Fitchburg)}}$ = 49 miles/*myl* Weekly must travel/ *moet weekliks ry* = 5 × 2 = 10 trips ✓ MA ✓ MA He can travel = 23 × 18 = 414 mileswith a full tank. *Hy kan 414 myl ry met 'n vol tenk,* 8 trips is 49 × 8 = 392 miles – now he needs to refill after Thursday's trips *8 ritte is 392 myl – dan hervul hy na Donderdag se terugkeer.* ✓ A With the full tank he only needs to travel Friday return trip / *HyrydanslegsVrydagheen-en-weer* Friday trip: 49 × 2 = 98 miles / *myl* ✓ MA Used/*Gebruik* = $\frac{98}{18}$ ✓ CA = 5,44 gallons/ *gelling* ✓ MA ✓ CA Left in a tank is 23 – 5,44 = 17,56 gallons. *Daar is 23 – 5,44 = 17,56 gelling in die tenkoor*	1A travel distance 1RT trip distance 1MA dividing 1CA number of trips 1MA dividing 1CA simplification 1MA subtracting 1CA simplification **OR/*OF*** 1RT trip distance 1MA weekly miles 1MA multiply 1A travel distance 1MA dividing 1CA usage on last day 1MA subtracting 1CA diff. between capacity and used gallons	M L3

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	18 miles on 1 gallon / *18 myl op 1 gelling* ✓ RT 49 miles on *x* gallon / *49 myl op x gelling* $x = \frac{48}{18}$ ✓ MA = 2,722… ✓ A gallon per trip / *gelling per rit*	1RT trip distance 1MA dividing 1A travel distance	
	Number of trips on 1st full tank / *Getalritte met 1st voltenk* $= \frac{23}{2,722...}$ = 8,44… ✓ CA	1CA number of trips	
	∴ 8 trips before he fills up again / *8 rittevoorhyweervolmaak* ∴ 2 trips with second full tank/ *2 ritte met die 2de voltenk*		
	Fuel used / *Brandstofverbruik* ✓ MA ✓ CA = 2,722…× 2 = 5,44… gallon / *gelling*	1MAmultiplying 1CA simplification	
	Left in the tank / *Oor in die tenk* ✓ MA ✓ CA = 23 – 5,44… = 17,56 gallon / *gelling*.	1MA subtracting 1CA simplification	
	OR/*OF*	**OR/*OF***	
	Single Trip/*Enkelrit* = 49 miles /*myl* ✓ RT	1RT trip distance	
	Number of gallons for 1 trip/ *Getal gelling vir 1 rit* ✓ MA = 49 ÷ 18 = 2,72 ✓ A	1MA dividing 1A travel distance	
	Number of gallons for return trip/ *virretoerrit* = 2,72 × 2 = 5,44 ✓ CA ✓ MA ✓ CA 23 gallons/*gelling* ÷ 5,44 = 4,22 days/*dae* ≈ 4 days/*dae*	1CA number of trips 1MA dividing 1CA simplification	
	No of gallons left / *Hoeveelheid gelling oor* ✓ MA ✓ CA = 23 – 5,44 = 17,56 gallons	1MA subtracting 1CA simplification	
	OR/*OF*	**OR/*OF***	

Q/*V*	Solution/*Oplossing*	Explanation/*Verduideliking*	T/L
	23 × 18 = 414 miles/myl ✓A ✓ RT ✓MA Monday/Maandag : 49 × 2 = 98 miles/myl Tuesday/Dinsdag : 98 miles/myl Wednesday/Woensdag: 98 miles/myl Thursday/ Donderdag 98 miles/myl Totaal = 392 miles/myl ✓CA Fill up the tank on Thursday / *Maak die tenk vol petrol op Donderdag* Used per day /*Gebruik per dag* ✓ MA ✓ CA = 98 ÷ 18 = 5,44gallons Petrol left in tank/*Petrol oor in tenk* = 23 – 5,44 ✓ MA ✓ CA = 17,56 gallons Miles that can be travelled after Friday/*Myle wat nog gereis kan word na Vrydag* = 414 – 98 = 316 miles/myl Petrol left in tank/*Petrol oor in tenk* = 316 ÷ 18 = 17,56 gallons	1A travel distance 1RT trip distance 1MA multiplying 1CA number of trips 1MA dividing 1CA simplification 1MA subtracting 1CA simplification (8)	
5.2	${}^0C = \frac{5}{9}({}^0F - 32)$ $-7 = \frac{5}{9}({}^0F - 32)$ ✓ SF ${}^0F = \frac{9}{5} \times -7 + 32$ ✓ S = 19,4 ✓ CA ≈ 20^0F ✓ R **Or/of** $°F = -7 \div \frac{5}{9} + 32$ = 19,4 °C ≈ 20 °C	1SF substitution 1S simplification 1CA simplification 1R rounding (4)	M L2
		[29]	
		TOTAL/*TOTAAL*: 150	