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Department: Education PROVINCE OF KWAZULU-NATAL

## NATIONAL SENIOR CERTIFICATE

GRADE 10

# MATHEMATICAL LITERACY

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### **COMMON TEST**

### **MARCH 2019**

MARKS: 75

TIME: 11/2 hours

This question paper consists of 7 pages with 1 answer sheet.

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#### INSTRUCTIONS AND INFORMATION

- 1. This question paper consists of FOUR questions. Answer ALL the questions.
- 2. 2.1 Answer QUESTION 2.2.2 on the attached ANSWER SHEET.
  - 2.2 Write your surname and name in the spaces provided on the ANSWER SHEET. Hand in your ANSWER SHEET with your ANSWER BOOK.
- 3. Number the answers correctly according to the numbering system used in this question paper.
- 4. Start EACH question on a NEW page.
- 5. You may use an approved calculator (non-programmable and non-graphical). Unless stated otherwise.
- 6. Show ALL the calculation clearly.
- 7. Round off ALL the final answers to two decimal places, unless stated otherwise.
- 8. Indicate units of measurements, where applicable.
- 9. Write neatly and legibly.

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#### **QUESTION 1**

1.1		Mandisa bought a cell phone from J and J electronics.	٦
		Study the advertisement below and answer the questions	1.3
		that follow:	
		Anytime 750 Contract	
		* Was R749 pm ×24	
		* Now R699 pm ×24	
		* Sim-connection R209 once off	
		Includes :	
		• R750 airtime value (VAT incl.)	
		• 750 SMS	
		<ul> <li>750 MB + 180 minutes www.shoplight.com/fashion/mobile</li> <li>12cm × 5cm Touch screen and 16 GB memory</li> </ul>	
	1.1.1	Write down the time on the screen of the cell phone using an analogue format	
		for the morning.	(2)
	1.1.2	Mandisa used 60% of the total SMS. Calculate how many SMS did she actually	
		used.	(2)
	1.1.3	Write down the ratio of the touch screen dimensions as breadth is to length. Give	
		your answer as 1:	(2)
	1.1.4	Calculate the percentage change on the monthly instalments.	
		You may use the following formula :	
		Percentage change = <u>Previous installment – Current installment</u> × 100%	(3)
		Previous installment	(0)
).2		J and J store sells different colours of cell phones. In one month, they sold cell phones	
		valued to R48 560.	
	1.2.1	If red, silver and black cell phone were sold in the ratio of 1:3:5 respectively.	
		Determine (nearest one hundred rand) the amount of silver cell phone sold.	(4)
	1.2.2	Write down the ratio in its simplest form if 35 red, 45 silver and 60 black cell	
		phone were sold.	(3)
	1.2.3	Express as the percentage the price of black cell phones to the total value of cell	
		phones sold, if the value of black cell phones sold is R13 350.	(2)
			[18]

#### **QUESTION 2**

2.1

- Mr David is a sheep farmer and uses hay to feed his flock. One bale of hay weighs 144kg.
  - \* A bale of hay is a dried grass mainly used for animal feeding.



http//:www.google.com/

2.1.1	Determine the number of sheep that will consume ONE bale of hay per day. If one sheep consumes 6 kg of hay per day.	(2)
2.1.2	State with a reason whether the number of sheep in 2.1.1 is discrete or continuous variable.	(2)
2.1.3	If one sheep can approximately eat 4,5kg per day, calculate the number of days it will last for 8 sheep to complete ONE bale of hay.	(3)

2.2 Mr David buys small bales of hay for R75 each, table 2 shows the price for a number of bales he buys

#### Table 1: Price for a number of bales bought

			 0			
Number of bales	0	5	 12	Ν	35	40
Amount in (R)	R0	Μ	 R900	R1 500	R2 625	R3 000

Study table 1 above and answer the following questions.

- 2.2.1 Calculate the value of:
  (a) M
  (b) N
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- 2.2.2 Use the ANSWER SHEET provided to draw the graph that illustrates the relationship between number of bales and the amount in rands. (4)

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2.3

 $\bigcirc$ 

Mr David used the cheque payment method to pay for his order of animal feed, use the cheque below to answer the following questions.

	TAD	Any easy Avenue 20 <sup>th</sup> street		250-320
NK	TAB	Madson 3580		cheque
AFRICAN BANK	Pay Bataal : Coastal	Farmers	Date Datum	: 25-02-2019
	The sum of Die bedrag van :	n in kommunista orta turistati se orta bicert se orta in P		R 21 616 -53
TOTAL	MAIN BRANCH	This cheque valid for : <u>90 days</u>	_ONLY	
H			Sign :	10121
			A CONTRACT OF A	David

2.3.1	Write down the name of the shop where Mr David bought his stock.	(2)
2.3.2	In which month did Mr David purchase his feeding stock?	(2)
2.3.3	Complete the cheque by filling the amount (P) of purchase in words.	(2)
2.3.4	Explain why the amount is written in figures and in words?	(2)
2.3.5	Give the period in months in which the cheque is valid for.	(2)
		[25]

#### **QUESTION 3**

3.2

3.1 Sancle travels 6 minutes from home to the taxi stop, the taxi takes 17 minutes to reach school which is 25 km away from the taxi stop.

- 3.1.1 Calculate the total time taken in minutes by Sanele from home to school. (2)
- 3.1.2 Determine Sanele's total distance to and from school by a taxi in metres. (3)
- 3.1.3 Sanele's taxi is delayed for twelve minutes in arriving at the taxi stop.

What time did Sanele left home for school if she arrived at school by 07:30? (2)

Starling City Bus Service offers school transport and charges their rates according to different zones. Sanele's neighbour Jessica takes the bus to school every day Monday to Friday.

Zones	<b>Distance to School</b>	Daily travel fares per trip
Zone1	Less than 5 km	R7,50
Zone 2	5,1 km to 10km	R8,75
Zone 3	10.1km to 20km	R14,50
Zone 4	20,1km to 25km	R17,50
Zone 5	25,1km to 30km	R22,50
Zone 6	More than 30km	R29,50

Study table 2 and the information above to answer the following questions.

3.2.1 Determine the average speed (to nearest10km/h) of the bus, if it takes 0,42 hours to cover a distance of 27 km to school.

You may use the following formula: Speed = 
$$\frac{Distance travelled(km)}{time taken (hours)}$$
(3)

- 3.2.2 If a learner pays R350 in 20 days for return trips, in which zone does this learner take bus 464 to school? Show all workings. (3)
- 3.2.3 State with a possible reason why Starling bus service does NOT charge the flat rate for learners travelling by the bus to school. (2)

[15]

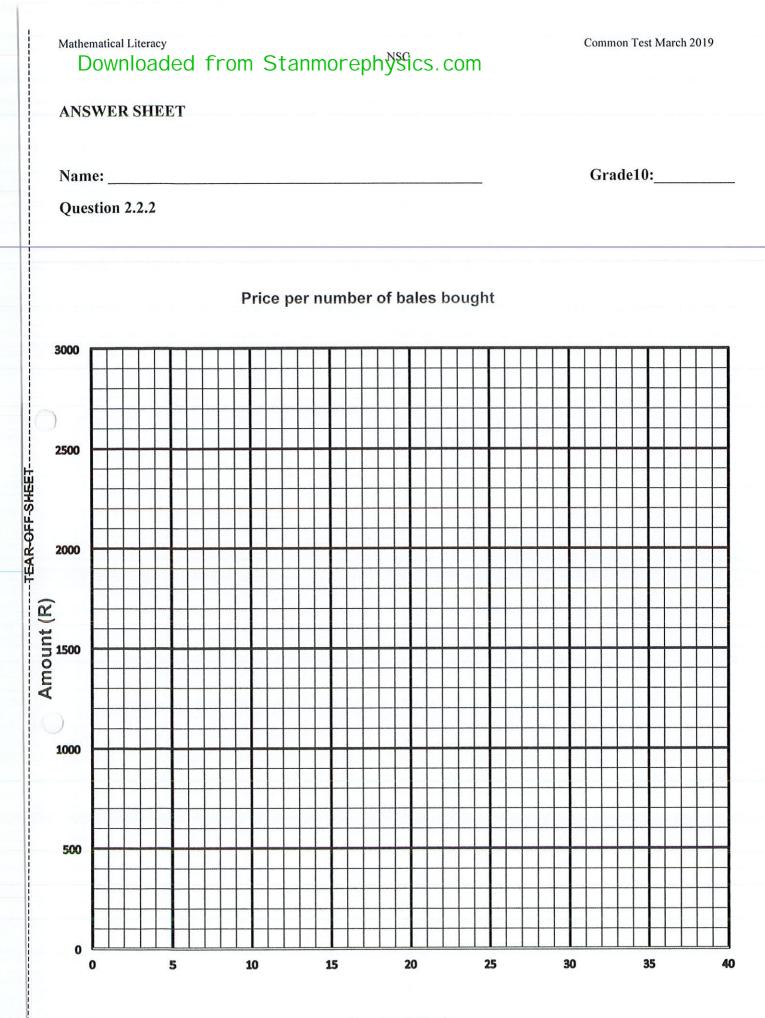
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### **QUESTION 4**

4.1		Sas	sha is a butchery manager and earns R124 000 per year.	
3	4.1.1		R124,000 is another format that is often used to write figures.	- 
			Explain the purpose in this context of using comma in a number.	(2)
	4.1.2		Sasha states that 15% and $\frac{6}{40}$ of her salary will yield the same salary increase.	
			Verify whether her statement is correct. Showing all your calculations.	(3)
)	4.1.3		Hence, calculate her actual salary increase in rand.	(2)
4.2		The	e butchery sells beef at R69/kg	]
	4.2.1		Explain what does R69/kg means?	(2)
	4.2.2		How much will a customer pay for 1,5kg of beef?	(2)
	4.2.3		Sasha uses the kitchen scale to weigh meat for customers with an empty bowl weighing 150g. If the scale reads the total weight of 3,25kg.	
		a)	Determine the weight (in kg) of meat placed on the scale.	(3)
)		b)	Zinhle was charged R213,90 for beef purchased. Verify, showing all your calculations whether the amount charged is CORRECT.	(3)
				[17]
			TOTAL:	[75]



Number of bales

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EXPLANATIONMethod </td <td></td> <td></td> <td></td> <td>ephysics ©</td>				ephysics ©
Method with accuracyAmount of silver cell phones $=\frac{3}{9} \times R48 560 \cdot MA$ Method with consistent accuracy $= R16 136,66667 \cdot A$ Consistent accuracy $= R16 200 \cdot CA$ Simplification $= 35 \cdot 45 : 60 \cdot A$ No penalty for units/rounding $= 35 \cdot 45 : 60 \cdot A$ No penalty for units/rounding $= 35 \cdot 45 : 60 \cdot A$ No penalty for units/rounding $= 7 : 9 : 12 \cdot A$ I.2.3 $\% = R13350 \times 100\% \cdot M$ I.2.3 $\% = R48560 \times 100\% \cdot M$ Pointion/reason/deduction/example $= 27,49\% \cdot A$ I.2.4ExplanationI.2.5InstificationI.2.4InstificationI.2.5InstificationI.2.4InstificationI.2.5InstificationI.2.4InstificationI.2.5InstificationI.2.4InstificationI.2.4InstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationInstificationIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		Total ratio parts = 1+ = 9	1M, Adding parts in a ratio	
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Simplification1.2.2Ratio $= 35:45:60  \forall A$ Reading from a table/ graph/ diagram $= \frac{35}{5}:\frac{45}{5}:\frac{60}{5}  \forall MA$ No penalty for units/rounding $= 7:9:12  \forall A$ Correct substitution in a formula $= 7:9:12  \forall A$ Opinion/ reason/deduction/example $1.2.3  \% = \frac{R13550}{R48560} \times 100\%  \forall M$ Rounding off $= 27,49\%  \forall A$ Explanation $Explanation$ UnitsUnits			1CA, Rounding	(4)
No penalty for units/rounding55Correct substitution in a formulaDistribution reason/deduction/exampleJustificationJustificationRounding offderiving a formulaExplanationUnits		Ratio =	1A, Correct ratio order 1MA Dividing hv 5	12
Opinion/ reason/deduction/example $1.2.3$ $\% = \frac{R13350}{R48560} \times 100\% \sqrt{M}$ Instification $Rounding off$ $= 27,49\% \sqrt{A}$ Explanation $Explanation$ $Units$		5 5 5 =7:9:12 4 A		(3) B
Justification $K48500$ Rounding off $= 27,49\% \sqrt{A}$ deriving a formula $= 27,49\% \sqrt{A}$ ExplanationUnits		= %		12
		K48 560 = 27,49% VA		(2) B
				[18]
	AO Answer only full marks			

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2.2.2	2.2.1(b) •	2.2.1(a)	2.1.3	2.1.2	2.1.1	QUESTI
Price per number of bales bought 3000 Amount In (R) 2500 Amount In (	N = R1 500 + R75√M = 20 √A	M = R75 × 5√M = R375 √A	No. of days = $\frac{144 \text{kg}}{(4,5 \text{kg} \times 8)} \checkmark \text{MCA}$ = $\frac{144 \text{kg}}{36 \text{kg}} \checkmark \text{S}$ = 4 days $\checkmark \text{A}$	✓CA Discrete variable, number of sheep can be expressed using whole numbers √J	Number of sheep = $144 + 6 \checkmark MA$ = $24$ sheep $\checkmark A$	QUESTION 2 (25 MARKS) QUE SOLUTION
1A, Correct Starting point 2A, Two correct point 1CA, Joining of points (4)	1M, Dividing correct values 1A, Answer AO (2)	1M, Multiplying 1A ,Answer AO (2)	IMCA, CA answer in 2.1.1 1S, Simplification 1A, Number of days (3)	, Discrete variable fustification	1MA,Dividing correct values 1A, Answer AO (2)	EXPLANATION
۵ C	B L3	BL	B Ľ	BĽ	ωĽ	5

<u> </u>	[ [25]		
BL	2A, Answer (2)	3 Months イイA	2.3.5
۳Ę	2R, Reason OR 2R, Reason (2)	For security reason $\sqrt{R}$ OR So that it is not easy to change or tamper with the amount in figures $\sqrt{R}$	2.3.4
- FC	2A, Amount in words (2)	$\mathbf{P} = \mathbf{T}$ wenty one thousand six hundred and sixteen rand and fifty three cents $\checkmark \checkmark \mathbf{A}$	2.3.3
- 	2A, Month (2)	February VVA	2.3.2
- 7 []	2A, Answer (2)	Coastal farmers √√A	2.3.1
5	EXPLANATION	SOLUTION	QUE

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rch 2019			. (2)		(3)			(2)	6	6		(3)	(3)	LI
Common Test March 2019		EXPLANATION	2E, thousand separator	1M, % Concept 1A, Answer	1J, Justification	1M, % concept 1A, Answer	IM, Multiplying by $rac{6}{40}$ 1A, Answer	AO	2E, Explanation <b>OR</b> 2E, Explanation	1MA, Multiplying correct values 1A, Answer AO	A, CA	OR IM, Subtraction IMA, Conversion IA, Answer	1MCA, from 4.2.3(a) 1CA, answer 1CA, conclusion	
Mathematical Literacy 6 NSC – Marking Guideline	OLESTION 4 119 MARKSI	SOLUTION	The purpose of the comma is to separate numbers using a thousand separator $\checkmark \checkmark E$	$\% = \frac{6}{40} \times 100\% \sqrt{M}$	= $15\% \checkmark A$ Her statement is correct $\checkmark J$	Increase = 15% × R124 000 ✓M = R18 600 ✓A	<b>OR</b> Increase = $\frac{6}{40} \times R124\ 000\ \checkmark M$	= R18 600 × A	One kilogram of beef costs R69 ✓✓E OR The price of beef per kilogram is R69 ✓✓E	Cost = 1,5 kg × R69 √MA = R103,50 √ A	Beef in kg = $\frac{3250-150}{1000}$ $\sqrt{M}$ = $\frac{3100}{1000}$ $\sqrt{MA}$	= 3,1 kg × A = 3,1 kg × A OR × M Weight in kg = 3,25 - 0,15 × MA = 3,1 kg × A	Cost = R69 = R213 .: The	
	OUEST	QUE	4.1.1	4.1.2		4.1.3	-		4.2.1	4.2.2	4.2.3(a)		4.2.3(b)	

UES.	QUESTION 3[15 MARKS]		
QUE	SOLUTION	EXPLANATION	ILT
3.1.1			-
	Time = 6 minutes + 17 minutes $\checkmark$ M	1M, Adding time	LI
	= 23 minutes $\checkmark$ A	1A, Answer	
•			(2)
2.1.2			
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	$= 50 \text{ km} \times 1000 \text{ V} \text{ MA}$	1MA, Conversion	Σ
	= 50 000 m × A	IA, Answer	(3)
3.1.3			-
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	= 06:55 VCA	ICA. Answer	,
	OR	OR	17
	Time = 7:30 – 35 minutes $\checkmark$ MCA	1MCA. Subtracting total time	Σ
	06:55 VCA	1CA, Answer	
		A0 (2)	(
3.2.1	Smood = 27 km SE		
	,42 hours	15r, Correct substitution	12
	= 64,28571 ✓ CA	10. Dounding	X
	$\approx 60 \ km/h \checkmark R$		(3)
3.2.2	Poil: 201 - R350 /		-
	20 days		
	= R 17,50	1. Contractions R350 by 20 days	L4
	D17 50	1A, Cost per unp	Σ
	Cost per trip = $\frac{X_1 (y, y)}{2}$	(3)	~
	- D0 75 - 1		
	= Ro, 73  A		
3.2.3	Because learners travel different distances <td>2R, Reason</td> <td>L4</td>	2R, Reason	L4
			(2) M

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