KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 11

MATHEMATICAL LITERACY

COMMON TEST

MARCH 2024

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MARKS: 100

TIME: 2 hours

This question paper consists of 9 pages, and an Addendum.

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QUESTION 1

1.1 Mr Jarvis works at a tyre fitment company. He works from Monday to Saturday and earns a normal rate of R65 per hour. During weekends and holidays, he earns an overtime rate of 40% more than the normal rate.

Use the information above and answer the questions that follow:

1.1.1 Calculate the amount he will receive if he works for 8 hours on Monday. (2)

1.1.2 Determine the number of hours he worked for a total earning of R325 on the normal rate. (2)

1.1.3 Show by calculations that the overtime rate is R91. (2)

1.2 Study the Tax invoice on ANNEXURE A and answer the questions that follow. Some information has been omitted.

1.2.1 Write down the name of the client that serviced the vehicle. (2)

1.2.2 Determine the total amount due on this invoice. (2)

1.2.3 Calculate the unit price of rack ends. (2)

1.2.4 Give the name of the sales representative. (2)

1.3 TABLE 1 below shows the top five rule differences in men's and women's cricket.

TABLE 1: TOP FIVE RULE DIFFERENCE IN MEN AND WOMEN CRICKET

Description	Men	Women
Test match	5 days (90 overs per day)	4 days (100 overs per day)
Cricket ball weighs	156 grams	142 grams
Ground diameter	59 metres to 82 metres	55 metres to 64 metres
DRS	YES	NO
Over rate	4 minutes per over	3,6 min per over
NB: *1 over = 6 balls bowled, ** DRS = decision review system		

[Source: https://www.sportsadda.com/cricket/]

Study TABLE 1 above and answer the questions that follow.

1.3.1 Write down the simplified ratio of a mass cricket ball for women to men. (2)

1.3.2 Convert 3,6 minutes to seconds ONLY. (2)

1.3.3 Determine the number of balls that can be bowled in one day in a men's cricket match. (2)

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1.3.4 The clock alongside shows the start time of playtime during the test match.



Write down the time on the clock using the 12-hour format. (2)

[Source: https://www.alamy.com/stock]

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QUESTION 2

2.1 A private hospital offers two options to patients hiring walking crutches at a rental cost for up to 30 days.
Option A: R50 per day
Option B: R200 once off plus R40 per day

Use the information above to answer the questions that follow.

2.1.1 Write down the equation that can be used to calculate the total cost of hiring crutches using option A. (2)

2.1.2 The total cost of hiring walking crutches in option B can be calculated using the following formula.
Total cost = R200 + R40×number of days.

Use the formula to calculate the number of days for hiring crutches at a total cost of R1 320 on option B. (3)

2.1.3 A client states that the cost of hiring crutches for 25 days on option A will be more than the cost on option B. Verify this statement by showing ALL calculations. (3)

2.1.4 TABLE 2 below shows the comparison of hiring crutches for the two options.

TABLE 2: TOTAL COST OF HIRING CRUTCHES ON TWO OPTIONS

No. of days	**0**	**5**	**10**	**...**	**A**	20	22	24	**26**	**...**	**30**
Option A cost (R)	0	250	500	...	900	1000	1100	1200	**B**	...	1500
Option B cost (R)	200	400	600	...	920	1000	1080	1160	1240	...	1400

Study TABLE 2 and answer the questions that follow. (2)

a) Identify the dependent variable in the table above.

b) Calculate the missing values **A**, and **B**. (4)

c) The graph showing the total cost of hiring crutches on option B has been drawn on the answer sheet. Use the answer sheet and the table to draw the graph for hiring crutches on option A. (4)

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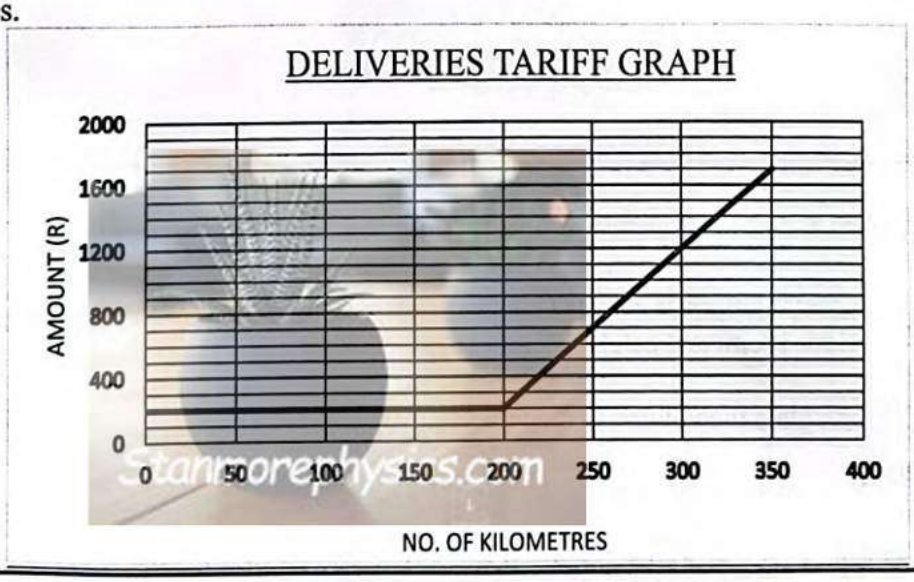
2.2 Ms Zicaba drives a truck that delivers crutches to different hospitals. The truck has a full tank capacity of 60 litres and fuel consumption of 6,9 litres per 100 km.

2.2.1 Explain the term *consumption* in this context. (2)

2.2.2 Calculate to the nearest litre, the number of litres of fuel she will use to drive 800 km. (3)

2.2.3 Her manager states that the full tank will be enough to make a delivery to a hospital that is 440km away from the warehouse without refuelling the vehicle on a return trip. Verify showing all calculations whether his statement is valid or not valid. (3)

2.3 The graph below shows the tariff the company uses to charge customers for deliveries of crutches.



Study the graph and answer the questions that follow.

2.3.1 Identify the type of relationship represented on the graph. (2)

2.3.2 Which of the following formulas will be the best to represent the relationship above?

A **Total cost =R200 + number of km travelled**
B **Total cost = R200 +R10 × number of km travelled**
C **Total cost = R200 + R10 × number of km above 200km**

Write ONLY a letter that represents the correct answer. (2)

2.3.3 Use the graph to determine the total amount to be charged for traveling 250 km. (2)

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QUESTION 3

3.1 Themba owns a roadside kitchen, his company was hired to serve breakfast to learners during the celebrations of the 2023 NSC matric results.

TABLE 3 below shows some items he used to serve learners.

TABLE 3: ITEMS USED TO MAKE BREAKFAST FOR LEARNERS

Item	Quantity	Price
Apricot Jam	6 X 900grams	R210
Joko tea bags	100's (0,4kg)	R47,95
Bread	20 slices (700 grams)	R17,25



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[source: www.google.com/images]

Study TABLE 3 above and answer the questions that follow.

3.1.1 A rectangular box of JOKO tea bags has the following dimensions: length 20cm, width 18cm, and height 100mm. (3)

Calculate the volume of the box in cubic centimetres.

You may use the formula:

The volume of rectangular Prism = length× width× height

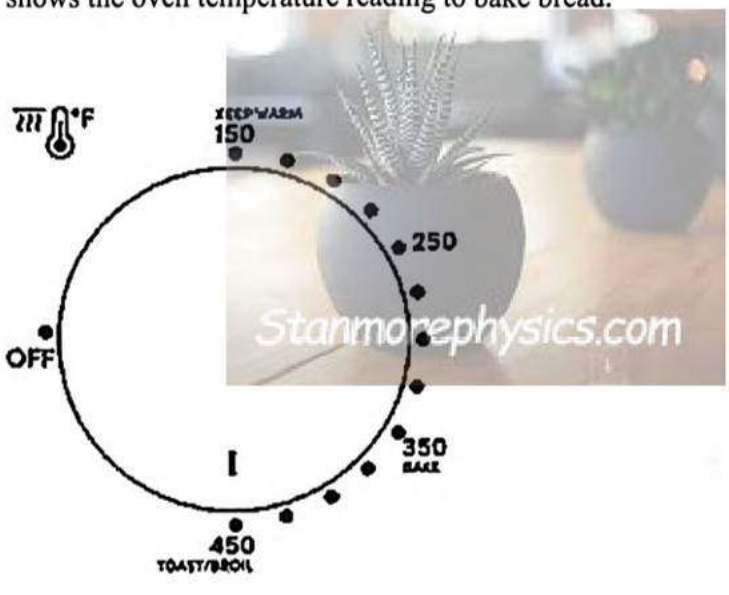
3.1.2 Calculate the price of ONE tea bag in rands. (2)

3.1.3 Determine the number of dozens of breads required to serve 150 learners if one learner will receive 4 slices of bread. (4)

3.1.4 The number of brown to white bread Themba uses are purchased in the ratio of 3:2 respectively. Determine the number of white bread he will use to serve the learners. (3)

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3.2 The oven dial knob below shows the oven temperature reading to bake bread.



[Source: https://www.shutterstock.com/search/oven-knob]

Use the picture above to answer the questions that follow.

3.2.1 Write down the temperature reading with units on the dial knob. (2)

3.2.2 Hence, use the given formula to convert the temperature above to degrees Celsius.
$°C = (°F-32) \div 1,8$ (3)

3.2.3 Themba states that the mass of one bread will be approximately 25 ounces. Note that **1 ounce = 28,3495 grams**. Critically comment on his statement by showing all calculations. (5)

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QUESTION 4

4.1 Madison sells circular button wall mirrors. The mirror has a circular frame around it with spherical iron balls.

The inner diameter of the mirror is 24,3 inches and the outer diameter is 27 inches.

PICTURE SHOWING CIRCULAR BUTTON MIRROR.

Diagram of the circular mirror	Picture of the mirror
	

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[source: www.amazon.ca/madison-park-signature-marlowe-spherical]

Note: The thickness of the frame is 0,74 inches.

Use the information and the picture above to answer the questions that follow.

4.1.1 Show by calculations that the diameter of ONE spherical iron ball is 1,35 inches. (3)

4.1.2 Define the term *radius* according to the given context. (2)

4.1.3 Determine the outer radius of the mirror in inches. (2)

4.1.4 Hence, calculate the circumference of the mirror in cm. **Note: 1 inch = 2,54cm** (4)

You may use the formula:

Circumference of the circle = 2× 3,142×radius

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4.2 TABLE 4 below shows the part of Madison's annual business financial report for 2019/2020.

TABLE 4 **MADISON: FINANCIAL REPORT**

From 1 March 2019 to 28 February 2020

INCOME		EXPENSES	
Description	**Amount (in Rand)**	**Description**	**Amount (in Rand)**
Donations and grants	140 000	Salaries	420 500
Municipal subsidy	300 000	Salaries for casual labour	100 000
Sales	1 262 420	Rates: water and light	34 600
		Telephone	3800
		Rent	180 000
		Bank fees	1 080
		Food: carten	146 200
		Maintenance	12 950
		Uniforms	9800
		Transport costs	23 670
TOTAL INCOME	**1 702 420**	**TOTAL EXPENSES**	**XXXXX**

[Adapted from: https://www.horizonhs.org/news/]

Study TABLE 4 above and answer the questions that follow.

4.2.1 Determine the number of months covered in this financial report. (2)

4.2.2 Name the main source of income for the Madisons. (2)

4.2.3 Determine the average monthly amount that was paid on bank fees. (2)

4.2.4 Identify ONE expense that is fixed and give a reason for your answer. (2)

4.2.5 Express the total salaries as a percentage of the total income. (3)

4.2.6 Madison sold five mirrors after 6 hours and 10 minutes from the time shown on the digital clock.



[Source: https://www.google.com/images/watches] (2)

Write down the time at which All five mirrors were sold.

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TOTAL MARKS:100

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ANNEXURE A

Question 1.2

TAX INVOICE ON REPAIRS

TYRE FITMENT & SUSPENSION SERVICE	**CLIFF TYRES** **SALES REP: Saleesmac** **Vendor No: 284371**		**DATE:25 JAN 2024**
Contact details: **ADDRESS:** **DEPPO TRADING CBD** **3867**	**OTHER DETAILS:** **035 288 7724**	**VAT NO: 552019632**	**BANKING DETAILS:** **BASA** **ACC:308856**** **BRANCH CODE:633004**
CLIENT INVOICE DETAILS **MBOMVU MK** **55 BAS HENDERSON ROAD** **EMPANGENI** **3880**		**CELL NO: 063 445 3697** **EMAIL ADDRESS: MKMBOMVU@GMAIL.COM**	

CASH SALE	**JOB CARD: SERVICE**		**TOYOTA COROLLA 2004** **REG NO: BX 01 CD ZN**		
STOCK CODE	**DESCRIPTION**	**QUANTITY**		**TOTAL**	
			UNIT PRICE	**PRICE**	**VAT@15%**
TR5470APEX	**TIE ROD ENDS SET**	**1**	**R300**	**R300**	**R39,13**
TR05467APEX	**RACK ENDS**	**2**	**R150**	**R300**	**R39,13**
LABOUR	**REPLACE ABOVE PARTS**	**2**	**R350**	**R700**	**R91,30**
TOTAL VALUE OF GOODS	**R1130,44**		**TOTAL DUE: R1300**	**TOTAL VAT:169,56**	

Thank you

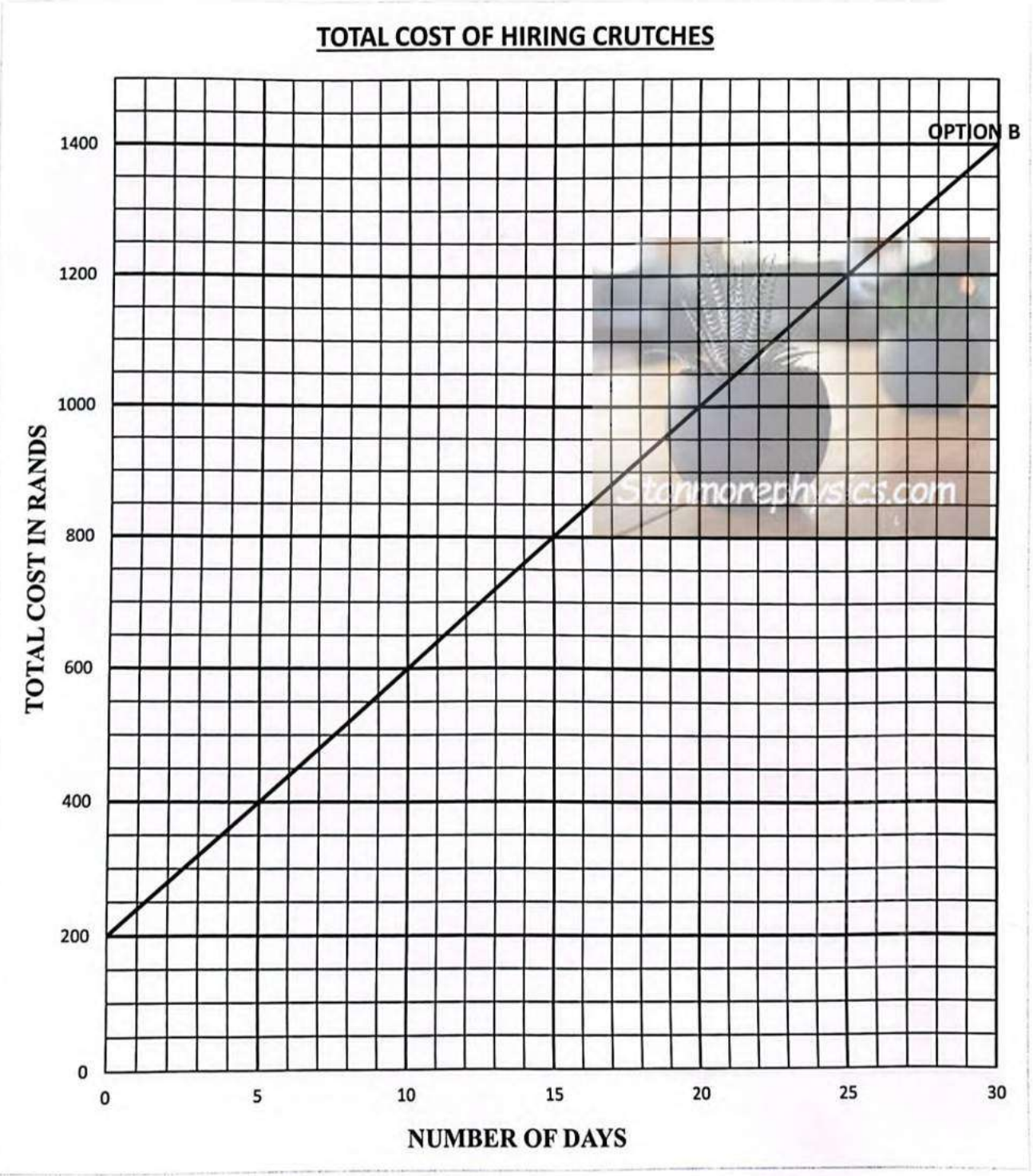
[Adapted from:real tax invoce:tyre boys]

NAME OF LEARNER: _____

GRADE 11: _____

ANSWER SHEET

QUESTION 2.1.4(C)



PLEASE TEAR ON DOTTED LINE

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