



Eastern Cape Department of Education

LEARNER'S NAME & SURNAME	:	
SUBJECT	:	MATHEMATICS
GRADE	:	9
TASK	:	Term 1 Assignment 2025
MARKS	:	50

✓

Question	1	2	3	4	5	4	7	Total
Topic	Multiple choice questions	Number systems, factors and multiples	Ratio, rate and proportion	Finance	Integers	Exponents	Patterns	
Total Mark	6	7	8	6	9	8	6	50
Learner Mark								

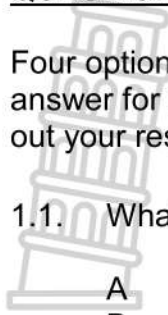
**Instructions:**

1. This question paper consists of 7 questions on 6 pages.
2. Write neatly on the spaces provided
3. Show all calculations and working out.
4. Non-programmable scientific calculators may be used except in questions indicated otherwise.

**QUESTION 1: Multiple choice questions**

Four options are given as possible answers to the following questions. Circle the answer for the correct answer. If you made a mistake or change your decision, cross out your response and circle the new letter.

1.1. What kind of a number is  $\sqrt{5}$ ? (1)

- 
- A A natural number
  - B A whole number
  - C A rational number
  - D An irrational number

1.2. The LCM of 96 and 108 is: (1)

- 
- A 168
  - B 2
  - C 864
  - D 96

1.3. A car travels 180 km in 2 hours on a straight road. How far can the car travel in 210 minutes at the same speed? (1)

- A 630 km
- B 25,7 km
- C 102,9 km
- D 315 km

1.4. The value of  $3[-(-3 + 17)] - (-4) \times 2$  is equal to? (1)

- A 50
- B 46
- C -40
- D -34

1.5. Simplify:  $4a^{12} \div 4a^3$  (1)

- A  $a^4$
- B  $a^9$
- C  $a^{15}$
- D  $a^{36}$

1.6. Consider the pattern

5; 8; 12; 17; .....

The next term in this pattern will be:

(1)

- A 19
- B 21
- C 23
- D 20

[6]

## **QUESTION 2: Number systems, factors and multiples**

2.1. Classify the following numbers as rational or irrational:

2.1.1.  $4\frac{1}{2}$  (1)

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2.1.2.  $\sqrt{17}$  (1)

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2.1.3. 2,141414..... (1)

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2.2. Write the following numbers as products of their prime factors:

2.2.1.  $135 =$  (1)

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2.2.2.  $225 =$  (1)

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2.2.3.  $315 =$  (1)

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2.2.4. The HCF of 135, 225 and 315 = (1)

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[7]

**QUESTION 3: Ratio, rate and proportion**

- 3.1. Two numbers are in the ratio 3 : 5. If the smaller number is 12, what is the greater number? (2)



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- 3.2. If 3kg of potatoes cost R24, how much will 7kg cost? (2)



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- 3.3. Zaheda travels for 6 hours partly by car at 100 km/h and partly by air at 300 km/h. If she travelled a total distance of 1200 km, how long did he travel by air? (4)

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**[8]**

**QUESTION 4: Finance**

- 4.1. Peter invests R20 000 in an account paying 15% per annum compounded annually. Calculate the future value of his investment after 10 years. (3)



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- 4.2. A car rental company has the arrangement of hiring their cars out at R175 a day plus R2 per kilometre for mileage over and above the included mileage of 500 km which is free. What would the total cost be if a car is rented for 5 days, and 850 km is covered in mileage. (3)



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**[6]**

**QUESTION 5: Integers**

- 5.1. Calculate without using a calculator.

5.1.1.  $-6 + 4 - 23$  (2)

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5.1.2.  $11 - [-3 + 2 - (-1)]$  (3)

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5.1.3.  $4 \times (-28)$  (1)



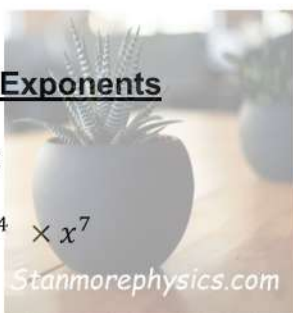
5.14.  $\sqrt{\sqrt{36} - \sqrt{4}}$  (3)

[9]

**QUESTION 6: Exponents**

6.1. Simplify:

6.1.1.  $x^4 \times x^7$  (1)



6.1.2.  $(4x)^0$  (1)

6.1.3.  $\frac{3a^{-2}b \times 24b^{-1}a^{-1}}{9a^{-4}b^{-3}}$  (4)

6.1.4.  $\frac{2^{n+2}}{2^{n-1}}$  (2)

[8]

**QUESTION 7: Patterns**

7.1. Consider the pattern:

5; 7; 9; 11; .....

7.1.1. Write down the next two terms of the pattern. (2)

7.1.2. Write down the general term of the given sequence in the form (2)

$T_n =$

7.1.3. Determine the 100<sup>th</sup> term. (2)

[6]

**THE END**





Eastern Cape Department of Education

Mathematics Assignment

Term 1

2025

GRADE 9

1 HOUR

TEST

50 MARKS



MARKING GUIDELINE

Stanmorephysics.com

This marking guideline consists of 5 pages

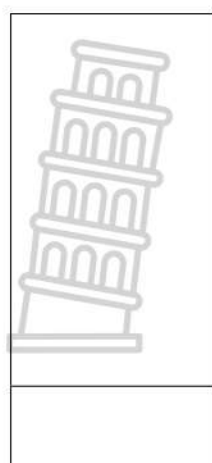
QUESTION 1	SOLUTIONS	MARK ALLOCATION	
1.1	D An irrational number ✓		(1)
1.2.	C 864 ✓		(1)
1.3	D 315 km ✓		(1)
1.4	D - 34 ✓		(1)
1.5	B $a^9$ ✓		(1)
1.6	C 23 ✓		(1)
			6 marks

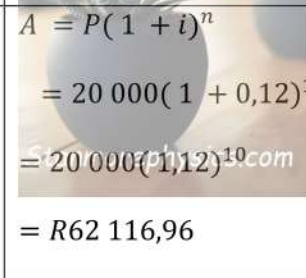
QUESTION 2	SOLUTIONS	MARK ALLOCATION	
2.1.1	Rational	Rational ✓	(1)
2.1.2	Irrational	Irrational ✓	(1)




2.1.3	Rational	Rational ✓	(1)
2.2			
2.2.1	$135 = 3 \times 3 \times 3 \times 5$	$135 = 3 \times 3 \times 3 \times 5$ ✓	(1)
2.2.2	$225 = 3 \times 3 \times 5 \times 5$	$225 = 3 \times 3 \times 5 \times 5$ ✓	(1)
2.2.3	$315 = 3 \times 3 \times 5 \times 7$	$315 = 3 \times 3 \times 5 \times 7$ ✓	(1)
2.2.4	$  \begin{array}{l}  135 = 3 \times 3 \times 3 \times 5 \\  225 = 3 \times 3 \times 5 \times 5 \\  315 = 3 \times 3 \times 5 \times 7  \end{array}  $ <p>∴ HCF = <math>3 \times 3 \times 5</math></p> <p>= 45</p>	HCF = 45 ✓	(1)
	<b>TOTAL</b>		7 marks

QUESTION	SOLUTIONS	MARK ALLOCATION	
3			
3.1	$  \begin{aligned}  &= \frac{5}{3} \times 12 \\  &= 20 \\  \text{OR} \\  &3 : 5 = 12 : x \\  &\frac{3}{5} = \frac{12}{x} \\  &3x = 60 \\  &\therefore x = 20  \end{aligned}  $	$  \begin{aligned}  &= \frac{5}{3} \times 12 \checkmark \\  &= 20 \checkmark \\  \text{OR} \\  &\frac{3}{5} = \frac{12}{x} \checkmark \\  &x = 20 \checkmark  \end{aligned}  $	(2)
3.2	<p>3 kg of potatoes cost R24</p> <p>1kg will cost <math>\frac{24}{3}</math></p> <p>= R8</p> <p>∴ 7kg will cost <math>7 \times R8</math></p> <p>= R56</p> <p>OR</p> <p>Cost of 3kg = <math>\frac{7 \times 24}{3}</math></p> <p>= R56</p>	<p>Cost per unit (R8) ✓</p> <p>R56 ✓</p> <p>OR</p> <p>Simplifying: <math>\frac{7 \times 24}{3}</math> ✓</p> <p>R56 ✓</p>	(2)
3.3	<p>Distance travelled by car = <math>100 \text{ km/h} \times 6 \text{ h}</math></p> <p>= 600 km</p>	<p>Distance travelled by car</p> <p>600 km ✓</p> <p>Distance travelled by air</p>	(4)

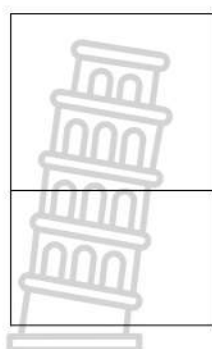
	<p>Distance travelled by air = 1200 km – 600 km</p> <p style="text-align: center;">= 600 km</p> $t = \frac{d}{s}$ $t = \frac{600 \text{ km}}{300 \text{ km/h}}$ <p style="text-align: center;"><math>\therefore t = 2 \text{ hours}</math></p> <p>She travelled 2 hours by air.</p>	<p>600 km ✓</p> <p>Substitution <math>\frac{600 \text{ km}}{300 \text{ km/h}}</math> ✓</p> <p>Answer 2 hours ✓</p>	
	<b>TOTAL</b>		<b>8 marks</b>

QUESTION 4	SOLUTIONS	MARK ALLOCATION	
4.1	 $A = P(1 + i)^n$ $= 20\,000(1 + 0,12)^{10}$ $= 20\,000(1,12)^{10}$ $= R62\,116,96$	<p>Substitution ✓</p> <p>Simplifying ✓</p> <p>R62 116,96 ✓</p>	(3)
4.2	<p>He first 500 km are free.</p> <p><math>\therefore 850 - 500 = 350 \text{ km}</math></p> <p>Total cost = <math>5 \times 175 + 2 \times 350</math></p> <p>= R1 575</p>	<p>350 km ✓</p> <p><math>5 \times 175 + 2 \times 350</math> ✓</p> <p>R1 575 ✓</p>	(3)
	<b>TOTAL</b>	<b>8 marks</b>	<b>6 marks</b>

QUESTION 5	SOLUTIONS	MARK ALLOCATION	
5.1.1	$-6 + 4 - 23$ $= -2 - 23$ $= -25$ <p>OR</p> $-29 + 4$ $= -25$	<p>NB: Learners must show the calculations: Allocate 1 mark if only answer written.</p> <p><math>-2 - 23</math> ✓</p> <p><math>-25</math> ✓</p> <p>OR</p> <p><math>-29 + 4</math> ✓</p> <p><math>-25</math> ✓</p>	(2)
5.1.2	$11 - [-3 + 2 - (-1)]$ $= 11 - (-1 + 1)$	$11 - (-1 + 1)$ ✓ $= 11 + 0$ ✓	(2)

	$= 11 - 0$ $= 11$ <p>OR</p> $= 11 - (-3 + 2 + 1)$ $= 11 - 0$ $= 11$	$= 11 \checkmark$ <p><b>OR</b></p> $11 - (-3 + 2 + 1) \checkmark$ $11 - 0 \checkmark$ $11 \checkmark$	
5.1.3	$4 \times (-28)$ $= -112$	<p>Answer</p> $-112 \checkmark$	(1)
5.1.4	$\sqrt{\sqrt{36} - \sqrt{4}}$ $= \sqrt{6 - 2}$ $= \sqrt{4}$ $= 2$	$\sqrt{6 - 2} \checkmark \checkmark$ $\sqrt{4} \checkmark$ $2 \checkmark$	(3)
	<p><b>TOTAL</b></p>		<p><b>8 marks</b></p>

QUESTION 6	SOLUTIONS	MARK ALLOCATION	
6.1.1	$x^4 \times x^7$ $= x^{11}$	$x^{11} \checkmark$	(1)
6.1.2	$(4x)^0$ $= 1$	$1 \checkmark$	(1)
6.1.3	$\frac{3a^{-2}b \times 24b^{-1}a^{-1}}{9a^{-4}b^{-3}}$ $=$ $\frac{3 \times 24 a^{-2+(-1)-(-4)} b^{1+(-1)-(-3)}}{9}$ $= \frac{72 ab^3}{9}$ $= 8ab^3$	$72 \checkmark$ $a^{-2+(-1)-(-4)} \checkmark$ $b^{1+(-1)-(-3)} \checkmark$ $8ab^3 \checkmark$	(4)
6.1.4	$\frac{2^{n+2}}{2^{n-1}}$	$2^{n+2-n+1} \checkmark$ $2^3 \text{ or } 8 \checkmark$	

	$2^{n+2-n+1}$ $2^3$ $= 8$		
	<b>TOTAL</b>		<b>8 marks</b>

QUESTION 7	SOLUTIONS	MARK ALLOCATION	
7.1	5; 7; 9; 11; .....		
7.1.1	13; 15	13 ✓ 15 ✓	(2)
7.1.2	$T_n = 2n + 3$ Stanmorephysics.com	$2n$ ✓ $+3$ ✓	(2)
7.1.3	$T_{100} = 2(100) + 3$ $= 203$	$2(100)$ ✓ $203$ ✓	(2)
	<b>TOTAL</b>		<b>6 marks</b>
<b>GRAND TOTAL</b>		50 Marks	