



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF EDUCATION

CAPRICORN SOUTH DISTRICT

GRADE 09

MATHEMATICS

TERM 1 - TEST

MARKS :100

DURATION: 2 HOURS

DATE : 06 MARCH 2024

INSTRUCTIONS

1. Read instructions and questions carefully.
2. The question paper consist of 7 questions. Answer all questions.
3. Use provided answer booklet to write all your answers.
4. Do your calculations before choosing a correct answer
5. All calculations must be shown in your answer book.
6. Non programmable scientific calculators maybe used, unless you are told to do so in some questions.
9. Diagrams are not necessarily drawn according to scale, all lines are regarded as straight lines unless otherwise stated.

QUESTION 1

1. Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number, for example if the correct answer for 1.1 is A, write your answer only as 1.1 A.

- 1.1 Which word best describes $-\sqrt{3}$

A Rational
B Irrational
C Undefined
D Non-real (2)

- 1.2 Given: 12; 18; *and* 27

What is the LCM of the numbers?

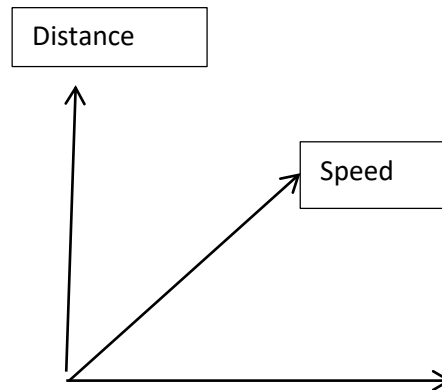
A 144
B 108
C 72
D 54 (2)

- 1.3 Given: $\frac{8}{30}$ *and* $\frac{12}{36}$

What is the HCF of the numbers?

A $\frac{2}{3}$
B $\frac{2}{6}$
C $\frac{1}{6}$
D $\frac{4}{3}$ (2)

- 1.4 The graph below represents the motion of a car. The graph shows (2)
that the car is:



- A. Accelerating
- B. Travelling north east
- C. Travelling uphill
- D. Travelling at a constant speed

1.5 3; 8; 15; 24

What is the next term in the pattern?

- A 33
- B 35
- C 83
- D 28

(2)

[10]

QUESTION 2

2.1 Given the following expressions, without a use of a calculator.

2.1.1 $3(-2 + 6) - 2(5 - 4 + 1)$ (1)

2.1.2 $\frac{2(-3) - (-5) - 4(6 \div 8)}{5 - 6}$ (4)

2.1.3 $\sqrt{49} - 2^3 + \sqrt[3]{216} \div 3$ (3)

2.1.4 $\sqrt{\frac{\sqrt[3]{-64+5}}{4^2+3^2}}$ (4)

2.1.5 $(-7 \times 11) \times 4$ (2)

$$2.1.6 \quad \sqrt[3]{10x^6 + 15x^6} \quad (2)$$

[16]**QUESTION 3**

3.1 Simplify the following.

$$3.1.1 \quad a^3 \times a^2c \quad (2)$$

$$3.1.2 \quad \frac{4^{x+1}}{2^x} \quad (4)$$

$$3.1.3 \quad a^{-1} + b^{-1} \quad (3)$$

$$3.1.4 \quad (2^2)^3 \times (2^3)^{-2} \quad (3)$$

$$3.1.5 \quad \left(\frac{x^{-3}y}{-2x^{-2}} \right)^{-3} \quad (5)$$

$$3.1.6 \quad \frac{3(x+y)^0}{y} + 5y^{-1} \quad (3)$$

[20]**QUESTION 4**

Draw and complete the multiplication table below:

$\times$	7	9	11	15
-7				
3.25				
0				
$\sqrt[3]{27}$				
$\frac{4}{3}$				

[20]**QUESTION 5**

5.1 Solve the following equations.

5.1.1 $8^x = 64$ (1)

5.1.2 $4^{x-1} = 1$ (3)

5.1.3 $3 \cdot 4^x = 192$ (3)

5.1.4 $4^{-y} = 16$ (3)

5.2 Simplify by writing into scientific notation

5.2.1 3427 (1)

5.2.2 $\frac{(4.2 \times 10^{-2}) - (3.3 \times 10^{-3})}{(2.4 \times 10^{-6})}$ (4)

[15]**QUESTION 6**

6.1 A car travelling at 120km/h covers a certain distance in 2 hours 45 minutes. The car then travels the same distance in 3 hours and 12 minutes. What is the constant speed that the car travels? (4)

6.2 R5 265 is invested at 12% per annum compound interest for 24 months. How much interest will the investment earn in 24 months? (3)

6.3 There are 120 boys in Grade 8 at Taxila High School. If the ratio of girls to boys is 3: 5, how many girls are there in Grade 8? (2)

6.4 A certain book consist of 200 sheets of paper. If 8 sheets of paper have a mass of 64g:

6.4.1 What is the mass of a single book? Give your answer in kilograms (1)

- 6.4.2 The cost of shipping 5 books to a store is R17, 50. What is the cost of shipping 17 books? (2)

[12]

QUESTION 7

- 7.1 Write down the next term in the given sequence:

3 ; 8 ; 13 ; ...

(1)

- 7.2 Describe the pattern in QUESTION 4.1 in words.

(1)

- 7.3 Write down the general term of the given sequence in the form $T_n =$

(2)

- 7.4 Which term in the sequence is equal to 38?

(3)

[7]

TOTAL 100 MARKS