



education

Department of
Education
FREE STATE PROVINCE

MOTHEO EDUCATION DISTRICT

GRADE 9

MATHEMATICS

TEST

MARCH 2024

TOTAL MARKS: 50

DURATION: 1 HOUR

INSTRUCTIONS AND INFORMATION

1. This question paper consists of 4 questions.
2. Answer ALL the questions.
3. Clearly show ALL calculations that you have used in determining your answers.
4. Answers only will not necessarily be awarded full marks.
5. If necessary, round answers off to TWO decimal places, unless stated otherwise.
6. Number the answers correctly according to the numbering system used in this question paper.
7. Write legibly and present your work neatly.

QUESTION 1

- 1.1 Consider the following numbers: 4 ; -9 ; $\sqrt{125}$; $\frac{7}{8}$; π ; $\sqrt[3]{64}$
- 1.1.1 Write down all the rational numbers from the list above (1)
- 1.1.2 Write down all the whole numbers from the list above (1)
- 1.2 Consider the numbers 160 and 400
- 1.2.1 Write each number as a product of its prime factors (2)
- 1.2.2 Determine the highest common factor (HCF) of 160 and 400 (1)
- 1.2.3 Determine the lowest common multiple (LCM) of 160 and 400 (1)
- 1.3 The price of a litre of milk increased from R15 to R18.
Calculate the percentage increase. (2)
- 1.4 Between which two consecutive integers does $\sqrt[3]{85}$ lie? (2)
- 1.5 Decrease 36 in the ratio 5:6 (2)
- [12]**

QUESTION 2

- 2.1 Express the ratio 16: 40: 48 in its simplest form. (1)
- 2.2 Nelson has 80 marbles. The ratio of green to blue marbles is 1:4.
- 2.2.1 How many blue marbles does he have? (3)
- 2.2.2 What fraction of marbles are green? (1)
- 2.2.3 What percentage of the marbles are blue? (1)
- 2.3 The distance from Bloemfontein to Ladybrand is 130 kilometres. A car travels this distance in 1 hours 24 minutes. Calculate the average speed of the car **(round off your answer to the nearest tenth)**. (3)
- 2.4 If 8 workers can paint a house in 6 hours, how many workers would be required to paint the same house in 4 hours? (2)
- 2.5 You invest R2500 in bank offering 6% per annum compound interest for 5 years. Calculate the value of your investment at the end of 5 years (3)
- [14]**

QUESTION 3

WITHOUT THE USE OF A CALCULATOR, calculate the value of:

3.1 $1 - 2 \times 3$ (2)

3.2 $\sqrt{16} + 2^3$ (3)

3.3 $\left[\frac{-12}{-3} \times (-2)^2 \right] + \sqrt[3]{11+16}$ (5)

[10]

QUESTION 4

4.1 Express 0,00504 in scientific notation (1)

4.2 Express $3,2 \times 10^{-5}$ in standard notation (1)

4.3 Simplify the following fully. Leave your answer in positive exponential form.

4.3.1 $3x^2 \times 2x^3$ (2)

4.3.2 $\frac{9y^9}{3y^3}$ (2)

4.3.3 $(-3m^5)^2$ (2)

4.3.4 $\sqrt[3]{8k^{12}}$ (2)

4.3.5 $x(x^{-1} + x^{-3})$ (4)

[14]

GRAND TOTAL: [50]