



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

**NATIONAL
SENIOR CERTIFICATE**

GRADE 11

**MATHEMATICS
TOPIC TEST
EXPONENTS, SURDS AND EQUATIONS
9 FEBRUARY 2026**

MARKS: 25

TIME: 30 minutes

Stanmorephysics.com

Instructions and information:

1. This task paper consists of **2** questions.
2. Answer **ALL** the questions.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Clearly show **ALL** calculations, diagrams, graphs, etc which you have used in determining your answers.
5. Answers only will not necessarily be awarded full marks.
6. You may use an approved scientific calculator (non-programmable and non-graphical).
7. If necessary, answers should be rounded off to **TWO** decimal places, unless stated otherwise.
8. Write neatly and legibly.

This question paper consists of 2 pages.

QUESTION 1

Simplify the following expressions fully, WITHOUT the use of a calculator:

1.1 $\frac{4^{1012} - 2^{2023}}{2^{2022} + 2^{2020}}$ (3)

1.2 $\frac{3^{2p} + 9^{p+1}}{2^{-p} \cdot 18^p}$ (4)

1.3 $\sqrt{3} \left(\sqrt{27} + \sqrt{5\frac{1}{3}} \right)$ (2)

1.4 $\frac{2^x \cdot \sqrt{2^x} \cdot \sqrt[5]{8^x}}{\sqrt[10]{8^{7x}}}$ (3)

[12]

QUESTION 2

Solve for x in each of the following:

2.1 $-x^2 + 16x - 63 = 0$ (3)

2.2 $2x^2 - 5x = 1$ (leave your answer(s) correct to TWO decimal places) (3)

2.3 $3^{2x} - 12 \cdot 3^x = -27$ (3)

2.4 $\sqrt{5x-1} - \frac{3}{\sqrt{5x-1}} = -2$ (4)

[13]

TOTAL: 25 MARKS