KWAZULU-NATAL PROVINCE
EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 11

MATHEMATICS
PROVINCIAL STANDARDISED ASSESSMENT
MARCH 2026

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MARKS: 75

TIME: 1½ hours

This question paper consists of 4 pages and an answer book of 8 pages.

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INSTRUCTIONS AND INFORMATION

Read the following instructions and information carefully before answering the questions.

1. This question paper consists of 3 questions.

2. Answer ALL the questions in the SPECIAL ANSWER BOOK provided.

3. Clearly show ALL calculations, diagrams, graphs, etc. which you have used in determining your answers.

4. Answers only will NOT necessarily be awarded full marks.

5. An approved scientific calculator (non-programmable and non-graphical) may be used, unless stated otherwise.

6. If necessary, round off answers to TWO decimal places, unless stated otherwise.

7. Write neatly and legibly.



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QUESTION 1

1.1 Solve for x:

1.1.1 $(x+1)(2x-6)=0$ (2)

1.1.2 $3x^2+8x=4$ (correct to TWO decimal places) (4)

1.1.3 $x^2+19x+88<0$ (4)

1.1.4 $\sqrt{36-5x^2}-2x=0$ (4)

1.1.5 $\frac{x}{x-2}+\frac{1}{x-4}=\frac{2}{x^2-6x+8}$ (6)

1.2 Solve for x and y simultaneously:

$2x+y=3$ and $x^2-y^2=-x-y$. (6)

1.3 The roots of a quadratic equation are $x=\frac{6\pm\sqrt{36-24m}}{4}$.

Calculate the values of m for which the roots of the equation will be real. (2)

[28]

QUESTION 2

2.1 Simplify fully, WITHOUT using a calculator:

2.1.1 $\sqrt[3]{0,125x^9}$ (3)

2.1.2 $\frac{6^{p+2}.10^{p-2}}{4^p.15^{p+1}}$ (4)

2.1.3 $\frac{18}{\sqrt{2}}-\sqrt{18}-2\sqrt{2}$ (3)

2.2 Solve for x, WITHOUT using a calculator:

2.2.1 $2^{-3x}=32$ (2)

2.2.2 $\frac{27}{9^x}-12.3^{-x}+1=0$ (5)

[17]

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QUESTION 3

3.1 If $3\tan\theta+2=0$ and $\sin\theta>0$, evaluate the following with the use of a diagram and **without using a calculator**:

3.1.1 $\cos\theta$ (4)

3.1.2 $13\cos^2\theta-\sqrt{13}\sin\theta$ (3)

3.2 Simplify the following expression to a single term:

$$\frac{\cos(360°-x).\tan(-x).\cos(90°+x)}{\sin(x+720°)}.$$ (6)

3.3 Evaluate **without the use of a calculator**:

$$\frac{\tan 120°.\sin 115°}{\cos 240°.\cos 205°}.$$ (7)

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3.4 Given: $\frac{1}{\tan x}(\cos x+\tan x.\sin x)$

3.4.1 Prove that $\frac{1}{\tan x}(\cos x+\tan x.\sin x)=\frac{1}{\sin x}$ (4)

3.4.2 For what value(s) of x in the interval $x\in[0°;360°)$ is

$\frac{1}{\tan x}(\cos x+\tan x.\sin x)$ undefined? (2)

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3.5 Given: $\cos\beta=k$ and $\sin\beta=2k$ for $\beta\in[180°\ ;\ 270°]$. Calculate, **without the use of a calculator**, the possible value(s) of k, leaving your answer in surd form. (4)

[30]

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