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KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

PROVINCIAL STANDARDISED ASSESSMENT

GRADE 10

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MATHEMATICS P1

PROVINCIAL STANDARDISED ASSESSMENT

JUNE 2026

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MARKS: 50

TIME: 1 Hour

This question paper consists of 5 pages.

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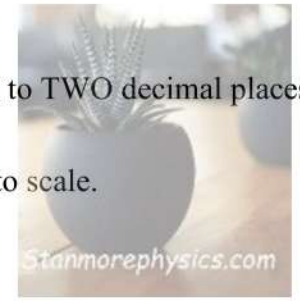
INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of 5 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), unless stated otherwise.
7. If necessary, round off answers correct to TWO decimal places, unless stated otherwise.
8. Diagrams are NOT necessarily drawn to scale.
9. Write neatly and legibly.



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QUESTION 1

If $K = \frac{\sqrt{1-3x}}{-x}$, find the value(s) of x, such that K is:

1.1 Undefined. (1)

1.2 Real. (2)

1.3 Positive. (1)

[4]

QUESTION 2

Simplify the following expressions COMPLETELY:

2.1 $(3x-2)(9x^2+6x+4)$ (2)

2.2 $2x^{-2} \div x^{-5} + (x^{-1})^{-3}$ (2)

2.3 $(a^{-2}-b^{-2}) \div (a^{-1}+b^{-1})$ (4)

[8]

QUESTION 3

3.1 Factorise the following expression fully:

$$5x^3 + \frac{40}{x^3}$$ (3)

3.2 Solve simultaneously for x and y if:

$$x^2(y-3) + 36(3-y) = 0$$ (4)

[7]

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QUESTION 4

4.1 Consider the following arithmetic sequence: $-3;2;7;12;17;...$

4.1.1 Determine the n^{th} term, T_n of the sequence. (2)

4.1.2 Determine the value of the 63^{rd} number to end with a 7. (3)

4.2 Consider the first 3 terms a linear number pattern: $x+3$; $3x+2$ and $6x-4$.

4.2.1 Determine the numerical value of x. (3)

4.2.2 Hence, write down the numerical value of the 4^{th} term. (2)

[10]

QUESTION 5

5.1 Given: $f(x)=3^x-3$

5.1.1 Calculate the y – intercept of f. (2)

5.1.2 Sketch the graph of f, showing all intercepts with the axes. (3)

5.1.3 Determine the x – intercept of $f(x)-6$ with the axes. (2)

5.1.4 If $g(x)=f(-x)$, describe the transformation from $f(x)$ to $g(x)$. (1)

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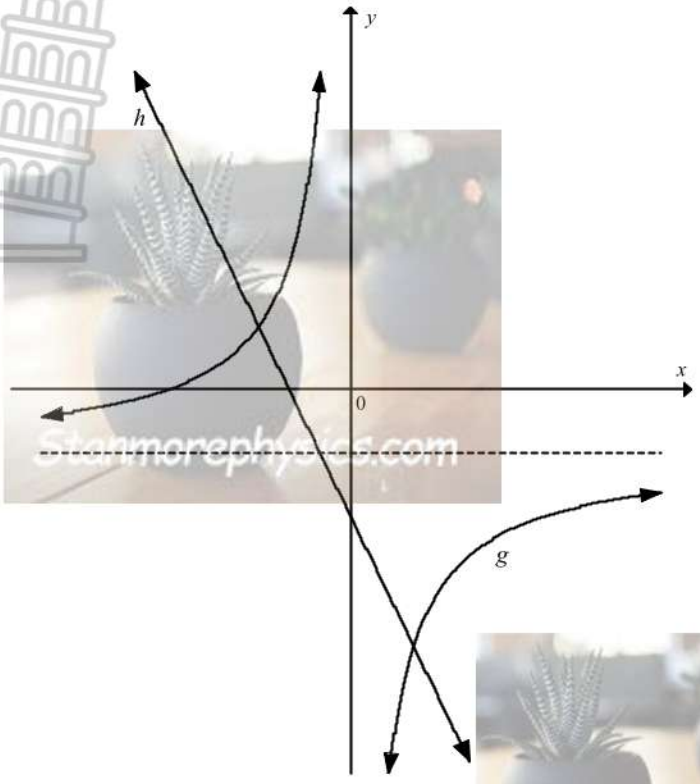
5.2 Given: $g(x) = -\frac{3}{x} - 1$ and $h(x) = -2x - 2$



5.2.1 Write down the equations of the asymptotes of g. (2)

5.2.2 Determine the value(s) of x for which:

(a) $g(x) = h(x)$ (4)

(b) $-4 < \frac{-2x-2}{3} \leq 0$ (3)

(c) g is increasing. (2)

5.2.3 Determine the equation of the line of symmetry of g with a negative x – intercept. (2)

[21]

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ANSWER BOOK

JUNE 2026

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Learner's Name & Surname	
School Name	
Grade	
Date	

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QUESTION	**Q1**	**Q2**	**Q3**	**Q4**	**Q5**
Total Per Question	**04**	**08**	**07**	**10**	**21**
Mark Scored					
Moderated Mark					

GRAND TOTAL

50

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QUESTION 1

	Solution	Marks
1.1		(1)
1.2		(2)
1.3		(1)
		[4]

QUESTION 2

	Solution	Marks
2.1		(2)
2.2		(2)
2.3		(4)
		[8]

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QUESTION 3

	Solution	Marks
3.1		(3)
3.2		(4)
		[7]

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QUESTION 4

	Solution	Marks
4.1.1		(2)
4.1.2		(3)
4.2.1		(3)
4.2.2		(2)
		[10]

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QUESTION 5

	Solution	Marks
5.1.1		(2)
5.1.2		(3)
5.1.3		(2)
5.1.4		(1)

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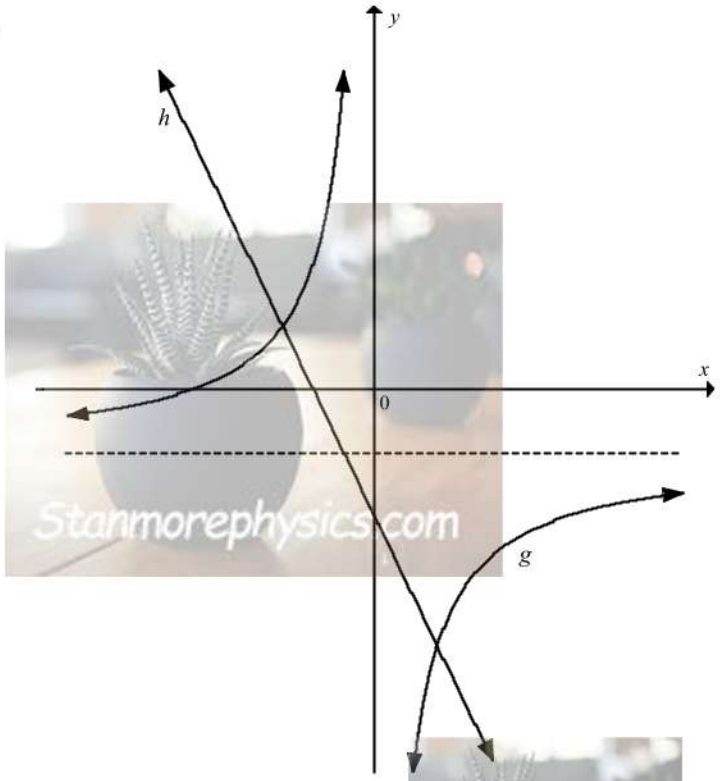
5.2		
5.2.1		(2)
5.2.2(a)		(4)

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5.2.2(b)		(3)
5.2.2(c)		(2)
5.2.3		(2)
		[21]

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	Additional space	Marks
	 	

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MARKING GUIDELINE

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QUESTION 1

1.1	$x = 0$	✓A (1)
1.2	$1 - 3x \geq 0$ $x \leq \frac{1}{3}; x \neq 0$ Answer only: Full marks	✓A ✓A (2)
1.3	$x < 0$	✓A (1)
		[4]

QUESTION 2

2.1	$= 27x^3 - 8$	✓A $27x^3$ ✓A -8 (2)
2.2	$= 2x^3 + x^3$ $= 3x^3$	✓A ✓CA (2)
2.3	$= \left(\frac{1}{a^2} - \frac{1}{b^2}\right) \div \left(\frac{1}{a} + \frac{1}{b}\right)$ $= \left(\frac{b^2 - a^2}{a^2b^2}\right) \div \left(\frac{b+a}{ab}\right)$ $= \left(\frac{b^2 - a^2}{a^2b^2}\right) \times \left(\frac{ab}{b+a}\right)$ $= \left(\frac{(b-a)(b+a)}{a^2b^2}\right) \times \left(\frac{ab}{b+a}\right)$ $= \frac{b-a}{ab}$	✓A LCDs ✓CA simplification ✓CA factors ✓CA answer (4)
		[8]

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QUESTION 3

3.1	$=5\left(x^3+\frac{8}{x^3}\right)$ $=5\left(x+\frac{2}{x}\right)\left(x^2-2+\frac{4}{x^2}\right)$	✓A common factor ✓CA✓CA factors (3)
3.2	$x^2(y-3)-36(y-3)=0$ $(y-3)(x^2-36)=0$ $(y-3)(x+6)(x-6)=0$ $y=3$ or $x=-6$ or $x=6$	✓A $-36(y-3)$ ✓CA common factor ✓CA value of y ✓CA both values of x (4)
		[7]

QUESTION 4

4.1.1	$T_n=dn+c$ $=5n-8$	✓A $5n$ ✓A -8 (2)
4.1.2	$7;17;27;37;...$ $T_n=dn+c$ $=10n-3$ $\therefore T_{63}=10(63)-3$ $\therefore T_{63}=627$	✓A n^{th} term/1^{st} 3 terms ✓CA substitution ✓CA answer (3)
4.2.1	$2x-1=3x-6$ $x=5$	✓A differences ✓A equating ✓CA answer (3)
4.2.2	$8\ ;\ 17\ ;\ 26$ $\ \ 9\ \ \ 9$ $\therefore T_4=35$ Answer only: Full marks	✓CA 1^{st} 3 terms ✓CA answer (2)
		[10]

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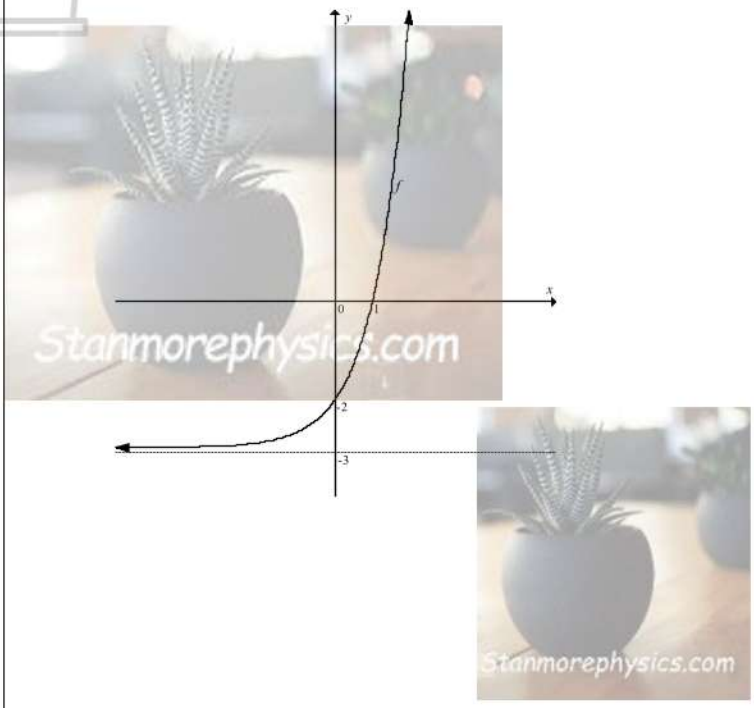
QUESTION 5

5.1.1	$f(0) = 3^0 - 3$ $\therefore y = -2$ Answer only: Full marks	✓A ✓A (2)
5.1.2		✓A shape ✓CA both intercepts ✓A asymptote (3)
5.1.3	$3^x - 9 = 0$ $3^x = 3^2$ $x = 2$	✓A $f(x) - 6 = 0$ ✓CA answer (2)
5.1.4	Reflection about the y – axis or about the line $x = 0$.	✓A (1)
5.2.1	$x = 0$ $y = -1$	✓A ✓A (2)

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5.2.2(a)	$\frac{-3}{x}-1=-2x-2$ $-3=-2x^2-x$ $2x^2+x-3=0$ $(2x+3)(x-1)=0$ $x=\frac{-3}{2}$ or $x=1$	✓A equating ✓CA standard form ✓CA factors ✓CA values of x (4)
5.2.2(b)	$-4<\frac{-2x-2}{3}\leq 0$ $-12<-2x-2\leq 0$ $-10<-2x\leq 2$ $5>x\geq -1$ or $-1\leq x<5$	✓A multiply by 3 ✓A adding 2 ✓CA answer (3)
5.2.2(c)	$x\in\mathbb{R};x\neq 0$ **OR** $x>0$ or $x<0$ **OR** $x\in(-\infty;0)$ or $x\in(0;\infty)$	✓A✓CA **OR** ✓CA✓CA (2)
5.2.3	$y=-x-1$	✓A✓A (2)
		[21]
		TOTAL MARKS:50

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