



KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

GRADE 10

TERM 2 2026

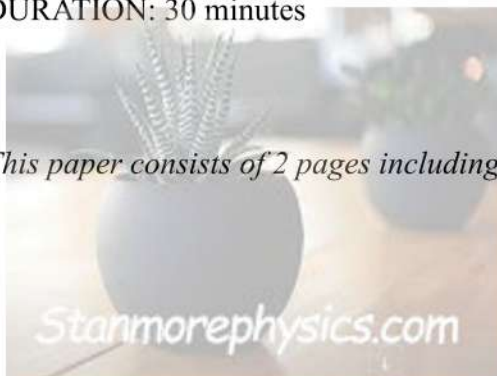
MATHEMATICS

INFORMAL TEST: Functions

MARKS: 25

DURATION: 30 minutes

This paper consists of 2 pages including the cover page.



QUESTION 1

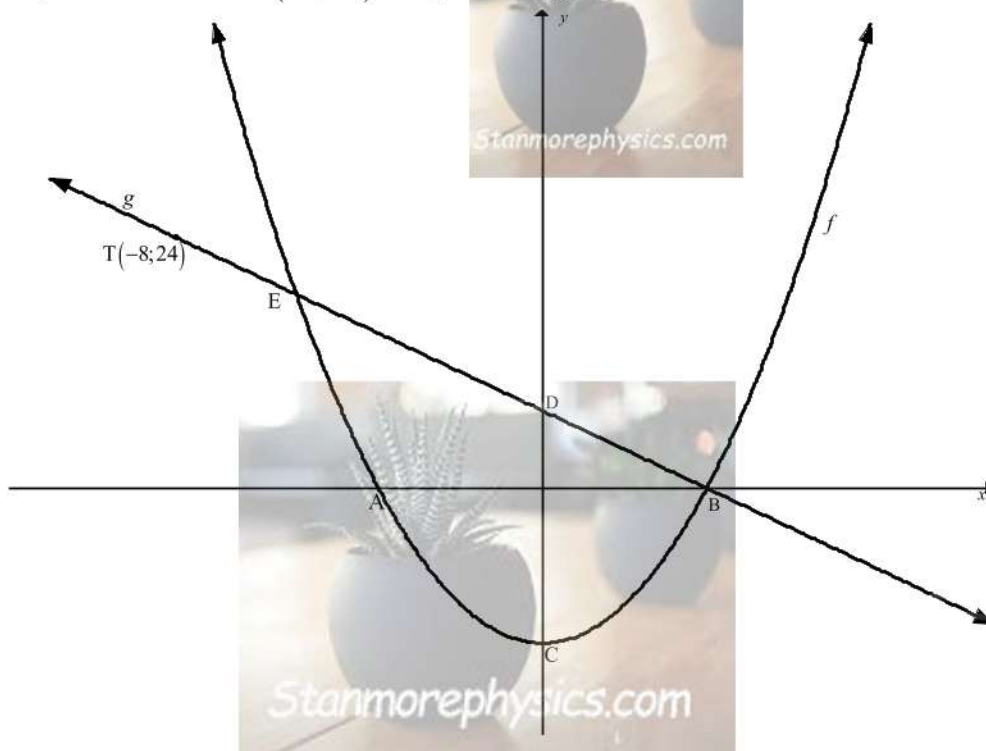
Consider $f(x) = \frac{3}{x} - 2$

- 1.1 Write down the equations of the asymptotes of f . (2)
- 1.2 Calculate the x intercepts of f . (2)
- 1.3 Sketch the graph of f . Clearly indicate the asymptotes and intercepts. (3)
- 1.4 Determine the equation of the line of symmetry of f with the positive gradient. (2)

[9]

QUESTION 2

Drawn below are the graphs of $f(x) = x^2 - 16$ and $g(x) = px + m$. A and B are the x intercepts of f . C is the turning point of f . D is the y intercept of g . f and g intersect at points E and B. $T(-8; 24)$ is a point on g .



- 2.1 Write down the coordinates of C. (1)
- 2.2 Determine the coordinates of A and B. (3)
- 2.3 Show that $p = -2$ and $m = 8$. (3)
- 2.4 Determine the length of DC. (2)
- 2.5 Determine the coordinates of E. (4)
- 2.6 For which value(s) of x is:
 - 2.6.1 f increasing? (1)
 - 2.6.2 $f(x) > 0$? (2)

[16]

TOTAL:25



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MATHEMATICS

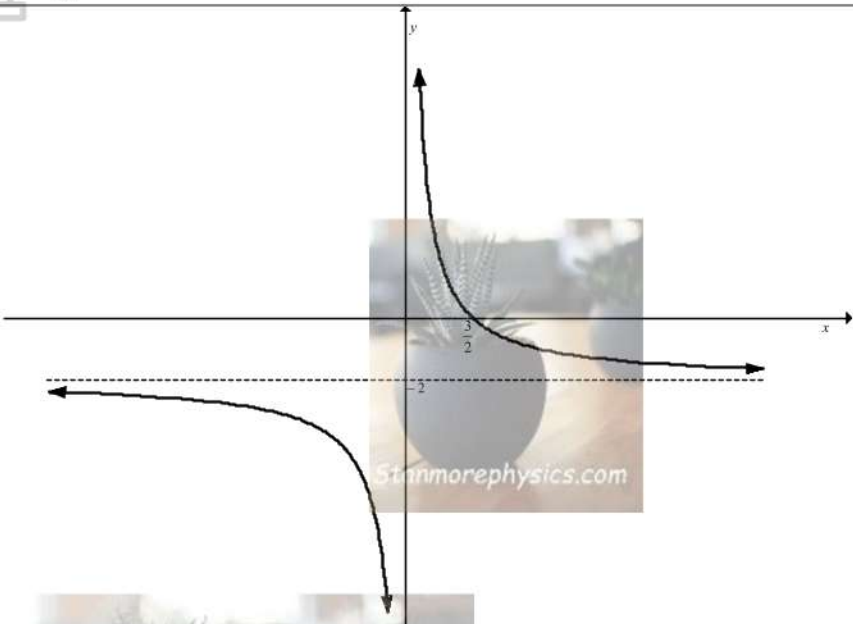
INFORMAL TEST: Functions

Marking Guidelines

MARKS: 25

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This marking guideline consists of 3 pages including the cover page.

QUESTION 1		
1.1	$x = 0$ $y = -2$	✓ Answer ✓ Answer
1.2	$0 = \frac{3}{x} - 2$ $2x = 3$ $x = \frac{3}{2}$	✓ Substitution ✓ Simplification ✓ Answer
1.3		✓ Shape ✓ Asymptotes ✓ Intercept
1.4	$y = x - 2$	✓ Answer
QUESTION 2		
2.1	$C(0; -16)$	✓ Answer
2.2	$0 = x^2 - 16$ $\sqrt{16} = x^2$ $x = \pm 4$ $A(-4; 0)$ and $B(4; 0)$	✓ Factorisation ✓ $A(-4; 0)$ ✓ $B(4; 0)$
2.3	$m = \frac{y_2 - y_1}{x_2 - x_1}$ $p = \frac{24 - 0}{-8 - 4}$ $\therefore p = -2$ $y = mx + c$ $24 = -2(-8) + m$ $\therefore m = 8$	✓✓ Substitution ✓ Substitution
2.4	DC = 24 units	✓ Answer
2.5	$x^2 - 16 = -2x + 8$ $x^2 + 2x - 24 = 0$ $(x + 6)(x - 4) = 0$ $x = -6$ or $x = 4$	✓ Equating ✓ Factorisation ✓ Substitution

	$g(-6) = 20$ $\therefore E(-6; 20)$		✓ Answer
2.6.1	$x > 0$		✓ Answer
2.6.2	$x < -4$ and $x > 4$		✓ $x < -4$ ✓ $x > 4$



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