KWAZULU-NATAL PROVINCE

EDUCATION
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 10

Stanmorephysics.com

MATHEMATICS P1

COMMON ASSESSMENT TASK

JUNE 2025 TEST

MARKS: 50

TIME: 1 hour

This question paper consists of 5 pages.

Copyright Reserved



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. Write neatly and legibly.

Copyright Reserved





QUESTION 1

Consider the expression: $K = \frac{3n}{\sqrt{n+5}}$

Write down the value(s) of n for which:

1.1 $K = 0$ (1)

1.2 K is undefined. (1)

1.3 K is non-real. (1)

[3]

Copyright Reserved

QUESTION 2

2.1 Simplify the following expressions fully:

2.1.1 $4p(2-5x)$ (2)

2.1.2 $-2(2x+3)(3x-2)$ (3)

2.1.3 $(4x+1)^2-(3x+1)(3x-1)$ (3)

Stanmorephysics.com

2.2 Factorise the following expression completely:

$x^2(x-1)+25(1-x)$ (3)

[11]

QUESTION 3

3.1 Solve for x if:

3.1.1 $x-3=\frac{18}{x}$ (3)

3.1.2 $-3 \leq 2-x<0$, where $x \in \mathrm{R}$ **and** represent your answer on a number line. (3)

3.2 A father is twice as old as his son. Twelve years ago, the father was three times the son's age. How old is the son now? (4)

3.3 If $x^3+\frac{1}{x^3}=12$ and $x^2+\frac{1}{x^2}=7$.

Determine the value of: $x+\frac{1}{x}+3$. (4)

[14]

QUESTION 4

4.1 Given: $f(x)=-x^2+4$

4.1.1 Sketch the graph of f. Clearly indicate all the intercepts with the axes on the graph. (3)

4.1.2 Write down the range of f. (1)

4.1.3 Determine the value(s) of x for which $f(x)>0$. (2)

4.1.4 Describe the transformation from f to h in words if $h(x)=-(x-1)(x+1)$. (2)

Stanmorephysics.com

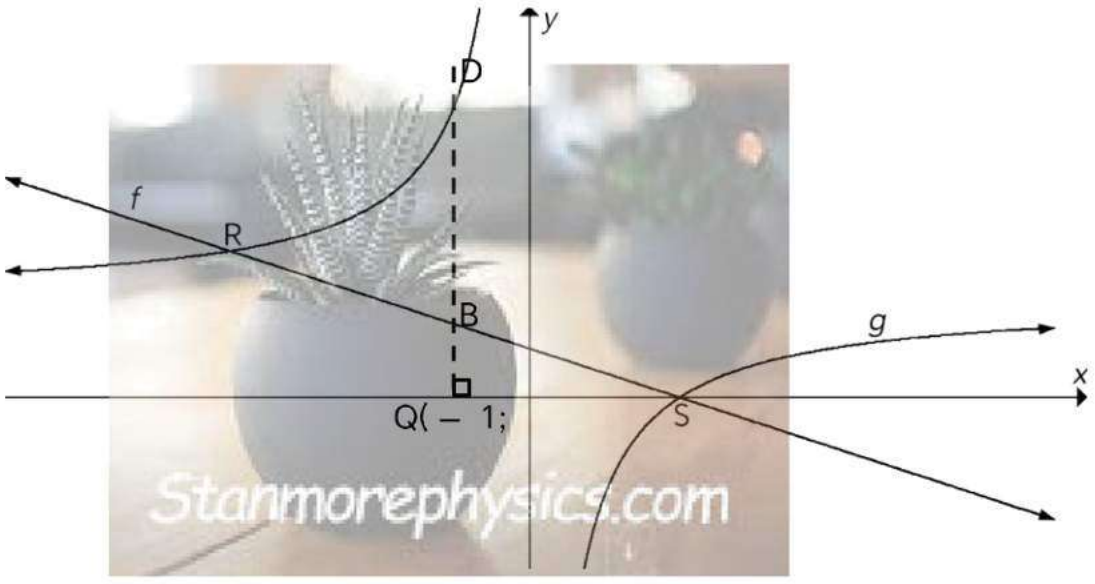
4.2 Determine the equation of the function $k(x)=\frac{a}{x}+q$, with the horizontal asymptote $y=3$ The straight line $f(x)=x+2$ intersects with the graph of k at the point $(2;4)$. (3)

[11]

QUESTION 5

Stanmorephysics.com

Given: $f(x)=-x+1$ and $g(x)=\frac{-2}{x}+2$, which are not drawn to scale. R and S are points of intersection of the graphs. DBQ is a line perpendicular to the $x-$ axis with D and B on g and f respectively. The coordinates of Q are $(-1;0)$.



Determine:

5.1 the equation of the line of symmetry of g with a negative gradient. (2)

5.2 the coordinates of R and S. (6)

5.3 the length of DB. (3)

[11]

TOTAL: 50

