NSC

LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION
VHEMBE EAST DISTRICT



VHEMBE EAST DISTRICT

NATIONAL
SENIOR CERTIFICATE

GRADE 10

MATHEMATICS P1
MID YEAR EXAMINATION
JUNE 2022

MARKS: 50
TIME: 1 hour

Stanmorephysics.com

This Question paper consists of 6 pages including the cover page.

Copyright Reserved

INSTRUCTIONS

1. Answer ALL the questions.
2. Clearly show ALL calculations, diagrams, graphs etc. that you have used in determining your answers.
3. Answers only will not necessarily be awarded full marks.
4. An approved scientific calculator (non-programmable and non-graphical) may be used, unless stated otherwise.
5. If necessary, answers should be rounded-off to TWO decimal places, unless stated otherwise.
6. Diagrams are NOT necessarily drawn to scale.
7. Number the answers correctly according to the numbering system used in this question paper.
8. It is in your interest to write legibly and to present your work neatly.

downloaded from stanmorephysics.com

QUESTION 1

1.1 The value of $\sqrt{33}$ lies between two integers. Find these integers without finding the exact value of $\sqrt{33}$ (2)

1.2 Convert the following recurring decimal fraction $0,\dot{4}\dot{5}$ to a common fraction in its simplest form. (3)

[5]

QUESTION 2

2.1 Simplify:

$$\frac{(3x)^2(-2xy)^3}{2x^5y^4} \quad (3)$$

2.2 Factorise completely:

2.2.1 $6p+40-p^2$ (3)

2.2.2 $-xy-(y-x)b+b^2$ (4)

[10]

QUESTION 3

3.1 Solve for x:

$$\frac{x+2}{x^2-3x-4}=\frac{3}{x-4}-\frac{1}{2+2x} \quad (5)$$

3.2 Solve for x and illustrate your answer on a number line.

$$-2\le\frac{x}{2}<3 \quad (3)$$

3.3 The sum of two consecutive numbers is83. Find the numbers. (3)

[11]

QUESTION 4

4.1 The following pattern is given: 5 ; 8 ; 11 ; 14 ; …

Determine the general term of the pattern. (3)

4.2 $3x-7;\quad 2x;\quad 3x+1;$.....are the first three terms of a linear pattern.

4.2.1 If the pattern continues in this manner, determine the value of x. (4)

4.2.2 Which term in the sequence is the first to be greater than 31? (3)

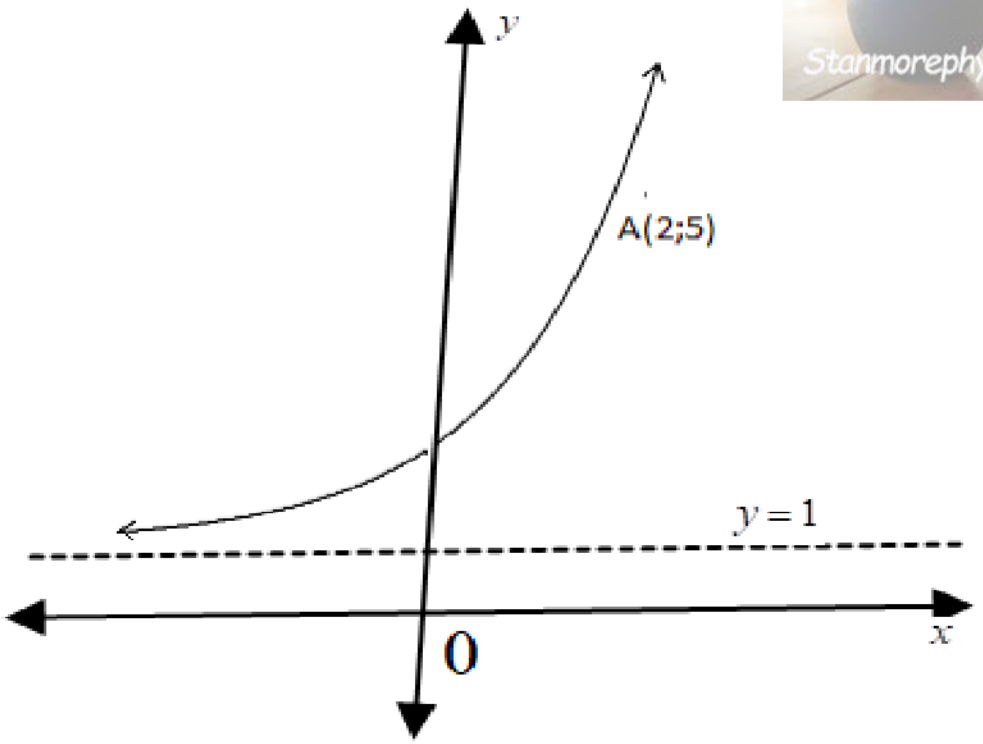
[10]

downloaded from stanmorephysics.com

Stanmorephysics.com

QUESTION 5

5.1 The sketch below shows the graph of $f(x) = b^x + q$. A point A(2;5) appears on the graph.



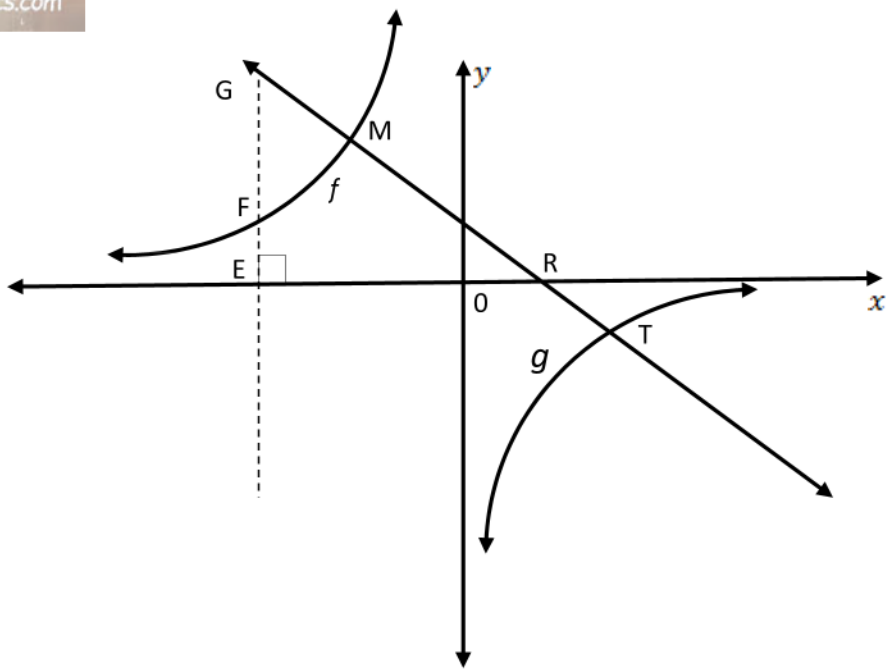
Calculate the values of b and q.

(3)

Stanmorephysics.com

5.2 Given: $f(x) = -x + 2$ and $g(x) = \frac{-3}{x}$, which is not drawn to scale.

M and T are points of intersection of the graphs.



Determine:

5.2.1 The coordinates of M and T. (6)

5.2.2 The coordinates of R. (2)

5.2.3 The length of GF if E (-6; 0) and F is a point where GF intersect the graph of $f(x)$ (3)

[14]

TOTAL: 50