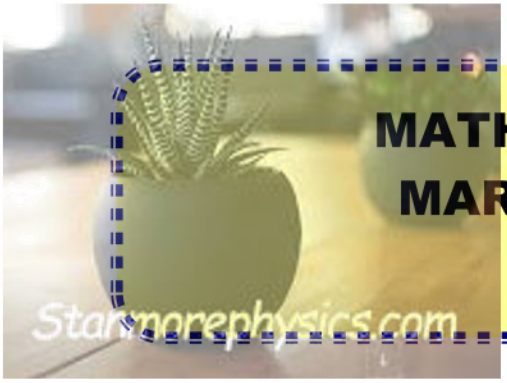
education

Department of Education
FREE STATE PROVINCE

# GRADE 10




# MATHEMATICS
# MARCH TEST
# 2022

downloaded from stanmorephysics.com

**MARKS: 50**

**TIME: 1 hours**

**This question paper consists of 4 pages**

Copyright reserved

## INSTRUCTIONS AND INFORMATION

Read the following instructions carefully before answering the questions.

1. This question paper consists of 4 questions.
2. Clearly show ALL calculations, diagrams, graphs, etc. that you have used to determine your answers.
3. Answers only will NOT necessarily be awarded full marks.
4. If necessary, round off answers to TWO decimal places, unless stated otherwise.
5. Diagrams are NOT necessarily drawn to scale.
6. You may use an approved scientific calculator (non-programmable and non-graphical), unless stated otherwise.
7. An information sheet with formulae is included at the end of the question paper.
8. Write neatly and legibly.

downloaded from stanmorephysics.com

Copyright reserved 

## QUESTION 1

1.1 Show that $0,75$ is rational number. (1)

1.2 Round 34,4678 off to two decimals (1)

1.3 Consider the following numbers: $\sqrt{25}$ ; $\sqrt{-7}$ ; $\pi$

Which one of the following numbers is:

1.3.1 Irrational (1)

1.3.2 Rational (1)

1.3.3 Non-real (1)

1.4 Determine two positive integers between which $\sqrt{33}$ lies. (2)

1.5 Simplify completely

1.5.1 $3x(2x-4xy)$ (2)

1.5.2 $(x-3)^2$ (2)

1.5.3 $(2r-p)(3r^2-4rp+p^2)$ (3)

**[14]**

## QUESTION 2

2.1 Factorize completely

2.1.1 $2x^2-8$ (2)

2.1.2 $x^2-4x+3$ (2)

2.1.3 $2px+3qx-2py-3qy$ (3)

2.2 Simplify

$$\frac{27x^3-8}{27x^2+18x+12}$$ (4)

**[12]**

downloaded from stanmorephysics.com

## QUESTION 3

3.1 Solve for x

3.1.1 $(2x+1)(x-3)=0$ (2)

3.1.2 $3^x = 1$ (2)

3.1.3 $-4 \leq 3x-1 \leq 5$ (represent your answer graphically) (4)

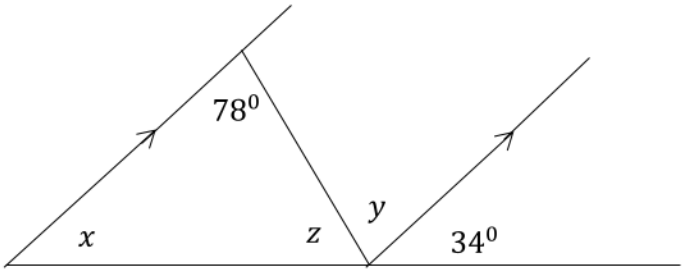
3.1.4 $9^{2x+3} = 27^{x+5}$ (4)

3.2 Solve for x and y simultaneously $2x - y = -1$ and $x + 2y = 12$ (4)

**[16]**

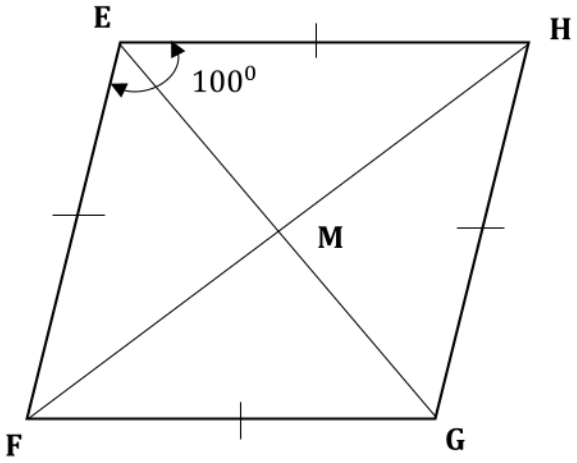
## QUESTION 4

4.1 Find the values of $x$, $y$ and $z$ in the diagram below. Give a reason for each statement.




(5)

4.2 EFGH is a rhombus in which the diagonals EG and FH intersect at M. FÊH = 100°




Find the value of:

4.2.1 FÊM (2)

4.2.2 EF̂M (2)

**[9]**

**TOTAL: 50**

Copyright reserved