**Mathematics**

**…../……./2021**

**8h30 am -11h30am**



**SENIOR TWO END OF YEAR EXAMINATIONS, 202021**

**SUBJECT: MATHEMATICS**

|  |
| --- |
| **/100**    **Marks:** |

**DURATION: 3 HOURS**

**INSTRUCTIONS:**

1. Do not open this question paper until you are told to do so.
2. Answer all questions: **100 marks**

5) Use only a **blue** or **black** pen.

**S2MATH COMPREHENSIVE,2020**

1) Simplify  (4marks)

2)Solve the equation y4 = 81. (5marks)

3) Rationalize the following

a)  (4marks)

b)  (6marks)

4) a) If  find the value of

 (4marks)

1. If P(x) and Q(x) are polynomials such that  and 

Find  and simplify completely (6marks)

5) Solve the following system by substitution (10marks)



6)The sum of two numbers is 20. The larger number is four less than twice the smaller number. What are the two numbers? (10marks)

7) a)A man salary last year was 150 000 FRW. This year it was increased by 20%. What is her salary this year? (6marks)

b) Find the midpoint of the points A (3, 8) and B (-9, 2). (4marks)

8) Suppose that 14, b, c is a Pythagorean triple. Find the value of b and c. (10marks)

9) )If  and  are two vectors such that  and 

Workout the following:

i)  (4marks)

ii)  (4marks)

iii)Magnitude ofor  (4marks)

10) The table below shows the distribution of results obtained by S2 Students in a Math Test out of 20

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 14 | 15 | 16 | 17 | 15 | 16 |
| 16 | 17 | 18 | 17 | 17 | 17 |
| 17 | 17 | 17 |  |  |  |

a)Complete the frequency table below:(10marks)

|  |  |  |
| --- | --- | --- |
| Marks , | Frequancy , |  |
| 14 | 1 |  |
|  |  |  |
|  |  |  |
|  |  |  |
| 18 | 1 |  |
|  |  |  |

b)Calculate the mean marks (3marks)

c)Determine the mode result of the distribution and explain your answer (2marks)

d)what is the highest result (1mark)

e) What is the lowest result? (1mark)

f) How many students did they pass the test (2mark)