KITH AND KIN INTERNATIONAL COLLEGE

*7/11 Kaoli Olusanya Street, Owode Ibeshe, Ikorodu, Lagos State.*

THIRD TERM EXAMINATION 2024/2025 ACADEMIC SESSION



|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **NAME** |  | | | | |
| **SUBJECT** | **MATHEMATICS** | **CLASS** | **SS 2** | **DURATION** | **2½ HOURS** |

**THEORY**

**(100 Marks)**

**INSTRUCTIONS**

1. **Write your name in the space provided at the top of this question.**
2. **This paper is divided into two Parts: A and B.**
3. **Answer 10 questions; all in Part A, and five questions from Part B.**

**PART A**

**Attempt all questions in this part.**

1. (a) Without using tables or calculator, simplify , leaving the answer in standard form

(scientific notation).

(b) Simplify :  , leaving the answer in surd form (radicals).

**WAEC 2014/1** **(8 marks)**

1. A carpenter was told to make a rectangular desk with top of dimension 50 cm by 40 cm. The

carpenter actually made the desk 60 cm by 35 cm.

1. Calculate the percentage error in the;
2. length and the breadth
3. area of the table top.
4. Find the product of the two errors in (a)(i) **WAEC 1990/4 (8 marks)**
5. (a) The graph of  passes through the point**.** Find the values of.

(b) Two lines,  and  intersect at the point. Find the coordinates of .

***NECO* 2018/2 (8 marks)**

4. A boy 1.2m tall, stands 6m away from the foot of a vertical lamp pole 4.2m long. If the lamp is at the

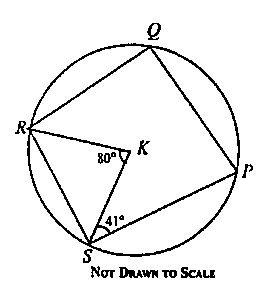
tip of the pole,

(a) represent this information in a diagram ;

(b) calculate the (i) length of the shadow of the boy cast by the lamp ; (ii) angle of elevation of the lamp

from the boy, correct to the nearest degree. **WAEC 2013/5 (8 marks)**

5.



In the diagram above, P, Q , R, and S are points on the circle with centre K. KR is a bisector of angle

∠SRQ, ∠KSP , and ∠SKR .

(a) Find: ∠RQP;

(b) Find ∠SPQ **WAEC 2023/5 (8 marks)**

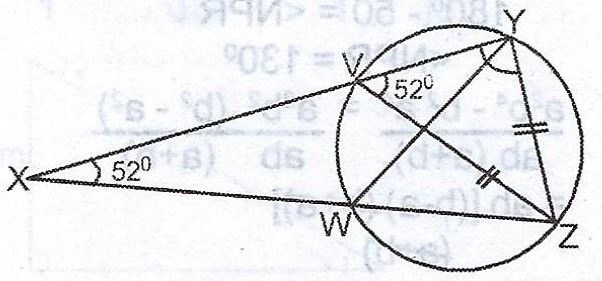
**PART B**

***Attempt five [5] questions only in this part****.*

6. PQ is a tangent to a circle RST at the point S. PRT is a straight line, < TPS = 34° and < TSQ = 65°.

(a) Illustrate the information in a diagram;

(b)  find the value of : (i) < RTS ; (ii) < SRP.



(c) In the diagram, /VZ/ = /YZ/, < YXZ = 20° and < ZVY = 52°. Calculate the size of < WYZ.

**WAEC 2017/8 (12 marks)**

7. A boy stands at the point M on the same horizontal level as the foot, T of a vertical building. He observes

an object on the top, P of the building at an angle of elevation of 66°. He moves directly backward to a

new point C and observes the same object at an angle of 53°. if | MT | = 50 m:

1. Illustrate the information in a diagram;
2. (i) Calculate and correct to one decimal place: the height of the building;

(ii) Calculate and correct to one decimal place: LINE MC. ***WAEC* 2023/5**

1. The product of two consecutive positive numbers is 195. By constructing a quadratic equation and

solving It, find the two numbers. **WAEC 1995/7 (12 marks)**

8. (a) The height, h m, of a dock above sea level is given by **.**

Find :

(i) the value of when ; (ii) correct to two significant figures, the value of when .

(b) Determine the value of for which the following expression is undefined ;

**WAEC 2015/4 (12 marks)**

9. (a) The probabilities that three boys pass an examination are ,  and  respectively. Find the

probability that :

(i) all three boys pass ; (ii) none of the boys pass ; (iii) only two of the boys pass. **WAEC 2001/9**

(b) Given the points and on the Cartesian plane such that is the midpoint

of , find the equation of the line that passes through and perpendicular to line .

**WAEC 1993/4 (12 marks)**

10. The table shows the marks scored by some candidates in an examination.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Marks (%) | 0-9 | 10-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60-69 | 70-79 | 80-89 | 90-99 |
| Frequency | 7 | 11 | 17 | 20 | 29 | 34 | 30 | 25 | 21 | 6 |

(a) Construct a cumulative frequency table for the distribution and draw a cumulative frequency curve.

(b) Use the curve to estimate, correct to one decimal place, the :

(i) Lowest mark for distinction if 5% of the candidates passed with distinction ;

(ii) probability of selecting a candidate who scored at most 45%.

**NECO 2015/10 (12 marks)**

11. (a) Y is 60 km away from X on a bearing of 135°. Z is 80 km away from X on a bearing of 225°. Find the :

(i) distance of Z from Y ;

(ii) bearing of Z from Y. **WAEC 2007/4**

1. (i) The sum of the second and third terms of a geometric progression is six times the fourth term.

Find the two possible values of the common ratio.

(ii) If the second term is 8 and the common ratio is positive, find the first six terms.

**NECO 2008/13 (12 marks)**

12. (a) Copy and complete the table of values for **for**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

(b) Using a scale of 2 cm to 60° on x- axis and 2 cm to 1 unit on the y- axis, draw the graph of

**for**

(c) Use your graph to solve the equation : **.**

(d) Find the range of values of x for which **. WAEC 2008/12 (12 marks)**

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| --- | --- | --- | --- | --- | --- |
| **NAME** |  | | | | |
| **SUBJECT** | **MATHEMATICS** | **CLASS** | **SS 2** | **DURATION** | **1HOURS** |

**OBJECTIVE TEST**

**(50 marks)**

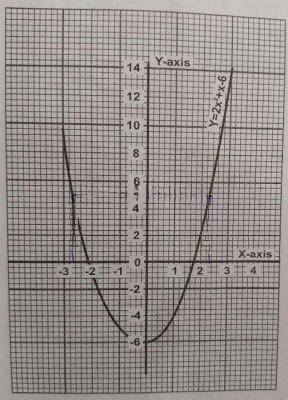
Answer **all** questions

*Each* question is followed by *four* options lettered **A** to **D**. Choose the correct option for ***each*** question and *shade in* ***pencil*** on your answer sheet the answer space that bears the same letter as the option you have chosen. Give only one answer to each question and erase completely any answer you wish to change. Do **all** rough work on this question paper.

1. If and , find the in terms of and
   1. 3
   2. 4
   3. 3
2. If 2 0.3010 and 1.8062, find correct to the nearest whole number, the value of .
   1. 6
   2. 5
   3. 4
3. A student found the approximate value of 0.02548 correct to two decimal places instead on two significant figures. Find the percentage error.
4. Two buses start from the same station at 9:00 am, and travel in opposite directions along the same straight road. The first bus travels at a speed of 72 km/h and the second at 48 km/h. At what time will they be 240 km apart?
   1. 1:00 pm
   2. 12:00 noon
   3. 11:00am
   4. 10:00 am
5. The nth term of a sequence is

Tn = 5 + (n - 1)2. Evaluate T4 - T6

1. If Olu, Tony and Tunde share ₦240 000.00 in the ratio 2 : 3 : 5 respectively, what is two-thirds of Tunde’s share?
   1. ₦120 000.00
   2. ₦80 000.00
   3. ₦72 000.00
   4. ₦48 000.00



From the graph determine the roots of the

equation

A. , 4

B.  ,

C. ,

D.  2, 1.5

1. If twice a certain integer is subtracted from 5 times the integer, the result is 63. Find the integer.
   1. 35
   2. 21
   3. 4
   4. 3
2. Simplify
3. The ratio of the number of men to the number of women in a 20-member committee is 3 : 1. How many women must be added to the 20-member committee so as to make the ratio of men to women 3 : 2?
   1. 2
   2. 5
   3. 7
   4. 9
4. If the 2nd and 5th terms of a G.P are 6 and 48 respectively, find the sum of the first four terms.
   1. 15
   2. 33
   3. 45
5. A ladder 9 m long leans against a vertical wall, making an angle of 64 with the horizontal ground. Calculate correct to one decimal place, how far the foot of ladder is from the wall.

A. 4.0 m

B. 5.8 m

C. 7.1 m

D. 8.1 m

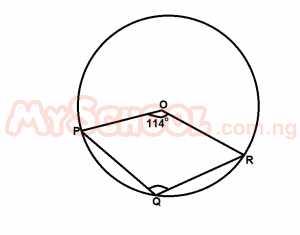
1. Factorize
2. If find
3. Given that , find the value

A. 1

B. 2

C. 3

D. 4



In the diagram above, O is the center

of the circle. If ∠POR = 114o,

calculate ∠PQR

A.  134o

B.  123o

C.  117o

D.  114o

18. Evaluate

A. 1

B. 202

C. 20.02

D. 2.02

19. If find



1. is negative and is

negative. Which of the following is

true of

A.

B.

C.

D.

1. The fourth term of an exponential

sequence is 192 and its ninth term is

6. Find the common ratio of the

sequence.

* 2. 2
  3. 3

1. Given that ,,… 71 is linear

sequence, calculate the number of

the terms in the sequence.

A. 20

B. 23

C. 22

D. 21

1. The expression will be

undefined when equals



1. The 1st term of a geometric progression (G.P) is , if the product of the 2nd and 3rd terms of the sequence is 972, find its common ratio.
2. 3
3. 12
4. 36
5. 45

25. Simplify

A.

B.

C.

D.

26. If

Which of the following statements is

not true?

A.

B.

C.

D.

27. Given that is a factor of , find the other factor.

A.

B.

C.

D.

28. If , Find the ratio of

1. 4 : 3
2. 7 : 4
3. 3 : 4
4. 4 : 7

29. Factorize

A.

B.

C.

D.

30. The truth set of is . Evaluate .

A.

B.

C.

D. 4

31. Find the roots of the equation

.

A. 1.0 and

B. 1.1 and

C. 1.4 and

D. 2.0 and

* + 1. A box contains 13 currency notes, all

of which are either ₦50 or ₦20 notes.

The total value of the currency notes

is ₦530. How many ₦50 notes are in

the box?

A. 4

B. 6

C. 9

D. 10

33. Solve

A.

B.

C.

D.

34. A casting is made up of copper and

zinc. If 65 of the casting is zinc and there are 147 g of copper, what is the mass of the casting?

A. 320 g

B. 400 g

C. 420 g

D. 350 g

35. Determine the value of x for which

?

**A.**

**B.**

**C.**   **or**

**D.**

36. Find the range of values of for which and ?

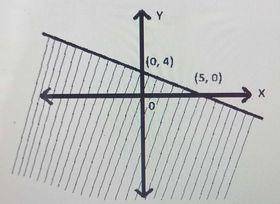
A.

B.

C.

D.

37.



Which inequality describes the graph

above?

A.

B.

C.

D.

38. In a bag of oranges, the ratio of the

good ones to the bad ones in the bag

is 5 : 4, if the number of the bad

oranges in the bag is 36, how many

oranges are there altogether?

A. 81

B. 72

C. 54

D. 45

39. If the angle of a sector of a circle of

diameter 8cm is 135°. Find the area

of the sector [Take π = ].

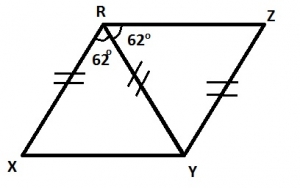
A.

B.

C.

D.

40.



In the diagram above, |XR| = |RY| =

|YZ| and ∠XRY = ∠YRZ ,

Calculate ∠XYZ.

A.

B.

C.

D.

41. The angle of elevation of the top of a cliff

15 meters high from a landmark is 60º.

How far is the landmark from the foot of

the cliff? Leave your answer in surd form

A.

B.

C.

D.

42. A ladder long long rest against a

wall such that its foot makes an angle

wih the horizontal. How far is the

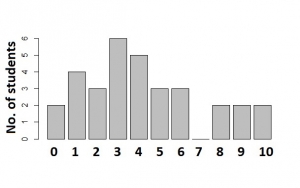
foot of the ladder from the wall?

A.  5

B.

C.  5

D.  10

43. 

The bar chart above shows the distribution of

marks scored by a group of students in a test.

Use the chart to answer the question below  
 How many students took the test?

A.  38

B.  32

C.  15

D.  11

44.

|  |  |  |  |
| --- | --- | --- | --- |
| Class |  |  |  |
| Frequency |  |  |  |

Find the standard deviation of the data

using the table above

A.

B.

C.

D.

45. The mean of ten positive numbers is 16.

When another number is added, the mean

becomes 18. Find the eleventh number

A.  3

B.  38

C.  30

D.  40

46. If the mean of , , , , and

is .

Find the median

A.

B.

C.

D.

47. A bag contains 3 white, 6 red and 5

blue identical balls. A ball is picked at

random from the bag. What is the

probability that it is either white or

blue?

B.

C.

D.

48. The probability of picking a letter T from the

word OBSTRUCTION is?

A.

B.

C. 

D. 

49. The probability of a student passing

any examination is . If the students

takes three examination, what is the

probability that he will not pass any of

them?

A.

B.

C. 

D. 

50. Two numbers are removed at random

from the numbers 1, 2, 3 and 4. What is

the probability that the sum of the

numbers removed is even?

A.

B.

C.

D.