



CHRIST HIGH SCHOOL PLOT 5, CHS
STREET, KM 32, ABUJA-KEFFI ROAD
UKE, NASARAWA STATE

**SS 2 PAPER II GENERAL
MATHEMATICS, SECOND
TERM EXAMINATION
2024/2025 ACADEMIC
SESSION**

**SUBJECT: GENERAL
MATHEMATICS PAPER II**
CLASS: SS 2
TIME: $2\frac{1}{2}$ Hours

NAME.....

CANDIDATE'S ADMISSION
NO.

INSTRUCTION

Write your name and number in
the space provided on your answer
booklet. Write your name on any
extra sheet used.

The paper is in two parts: **I and II**,
and will last for 2 hours 30
minutes.

Answer all the questions in part I
and five (5) questions in part II.

Write your answer in blue or black
ink in your answer booklet.

FOR EXAMINER'S USE

Total Score:

+

PAPER II

PART I (THEORY)

INSTRUCTION: Attempt all questions in this part

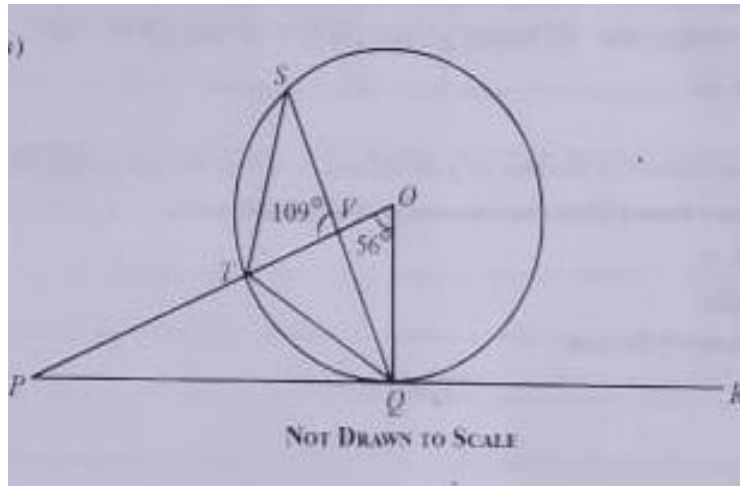
1. (a) A chord is 8 cm long in a circle of radius 10 cm. Calculate the angle subtended at the centre and the circumference of the circle
(b) Solve the inequality: $4 + \frac{3}{4}(x + 2) \leq \frac{3}{8}x + 1$ **[8 marks]**
2. (a) The vertices of ΔPQR are $P(-3,8)$, $Q(4,3)$ and $R(1,2)$. Find the equation of the lines:
 - i. PQ
 - ii. QR(b) An isosceles triangle has its equal sides 13 cm and the angle between these sides 63° . Calculate the length of the third side **[8 marks]**
3. The points X, Y and Z are located such that Y is 15 km south of X, Z is 20 km from X on a bearing of 270° . Calculate, correct to:
 - (a) Two significant figure $|YZ|$
 - (b) The nearest degree, the bearing of Y from Z**[8 marks]**
4. If the probability of a man owning a car is $\frac{1}{3}$, find the probability that:
 - (a) If two men X and Y were selected at random, only one owns a car.
 - (b) If three men X, Y and Z were selected at random, only one owns a car.**[8 marks]**
5. Two aeroplane **A** and **B** left Abuja at the same time. **A** flew on a bearing of 149° and **B** on the bearing of 210° . After an interval, **A** is 90km from **P** and the bearing of **B** from **A** is 253° . Find the distance of **B** from **P**.
[8 marks]

PAPER II

PART II (THEORY)

INSTRUCTION: Answer five (5) questions only in this part.

6.



(a) In the diagram \overline{PR} is a tangent to the circle centre O at Q $\angle POQ = 56^\circ$ and \overline{PO} intersects \overline{SQ} at V such that $\angle SVP = 109^\circ$, calculate :

(i) $\angle TQP$

(ii) $\angle QTS$

(b) write the negation of the following

(i) $x + 5 \leq 4$

(ii) A set of prime numbers: $\{2, 3, 5\}$

[12 marks]

7. **Two** observers Abu and Badu, 46 m apart, observe a bird on a vertical pole from the same side of the bird. The angles of elevation of the bird from Abu's and Badu's eye are 40° and 48° **respectively**. If at the foot of the pole, Abu and Badu are on the same horizontal:

(a) illustrate the information in a diagram;

(b) calculate, correct to **one** decimal place, the height of the pole.

[12marks]

8. Draw the graph of $y = x^2 - 3x - 5$ for the values of $x = -2$ to $x = 5$. Find the gradient at

(a) $x = 4$

(b) $x = 0$

[12marks]

9. (a) Given that $m = \tan 30^\circ$ and $n = \tan 45^\circ$. Simplify, without using calculator $\frac{m-n}{mn}$, leaving the answer in the form $p + \sqrt{q}$

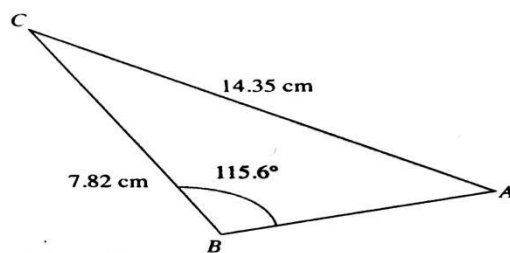
(c) An observer on top of a tower 20 m high, views the angle of depression of a point on the ground level, 30 m from the base, as θ° , Find θ

[12 marks]

10. (a) Using an appropriate diagram, prove that the angle which an arc of a circle subtends at the centre is twice that which it subtends at any point on the remaining part of the circumference.

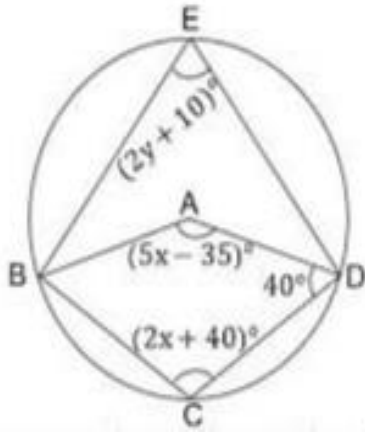
(b) Calculate the angles A and C of $\triangle ABC$ with $b = 14.35$ cm, $a = 7.82$ cm and $\hat{B} = 115.6^\circ$.

[12marks]



11. Using a convenient scale, draw the graph of $x + y_1 - 2 \leq 0$, $x + y_2 \geq 0$, let $-x + 2$, and $y_2 = -x - 2$

[12marks]



12. In the diagram above, BCDE is a circle with centre A, $\angle BCD = (2x + 40)^\circ$, $\angle BAD = (5x - 35)^\circ$, $\angle BED = (2y + 10)^\circ$ and $\angle ADC = 40^\circ$, Find ;

- (a) The values of x and y
- (b) $\angle ABC$.

[12marks]

13. A number is chosen at random from 1 to 20. Find the probability that the number is :

- (a) Odd
- (b) A multiple of 3.
- (c) Either an odd number or a multiple of 3.
- (d) A triangle has two sides as 16 cm and 4 cm, respectively, if the included angle is 120° . calculate the third side.

[12marks]