KASENGE GREENHILL SECONDARY SCHOOL

PURE MATHS SET TEN 2024

Attempt all questions in section **A** and any **FIVE** from section **B**

**SECTION A**

1. Given that , show that **(05 marks)**
2. A geometric progression has the sum of the first and second term equal to -4. The sum of the fourth and the fifth term is 108. Find the first term and the common ratio. **(05 marks)**
3. The lines L1 and L2 are given by intersect. Find the value of k and the point of intersection**(05 marks)**
4. Calculate the total area bounded by the curve , and the lines **(05 marks)**
5. The quadratic equation has repeated roots. Find the roots of the equation. **(05 marks)**
6. Evaluate **(05 marks)**
7. If p(x,y) is a point which moves such that , find the locus of point P **(05 marks)**
8. Find the gradient of the curve **(05 marks)**

**SECTION B**

**Attempt any FIVE questions from this section**

1. Given the curve
2. Determine the region where the curve doesn’t pass **(04 marks)**
3. Find the intercepts and the turning points **(03 marks)**
4. Find the asymptotes hence sketch the curve. **(05 marks)**
5. (a) Given that show that **(06 marks)**

(b) Differentiate with respect to x and simplify **(06 marks)**

1. Partialise  **(12 marks)**
2. (a) solve for x , π **(06 marks)**

(b) Prove that if A,B and C are angles of a triangle, then  **(06 marks)**

1. (a) Determine the equation of the plane represented by

(b) find the perpendicular distance from the point A(2,3,4) from the line λ **(07 marks)**

1. Given that , find  **(12 marks)**
2. **(a)** Expand in ascending powers of x upto the term in

(b) In an A.P, the first term of the AP iss equal to the first term of the GP and also the common difference of the AP is equal to the common ratio of the GP. The third term of the AP is equal to the second term of the GP. The fourth term of the AP is 10. Determine the two possible values of the first term. **(07 marks)**