
Instructions: 1) Answer all questions. Show all steps for full credit. 2) Use of scientific calculator is permitted. 3) Figures are not necessarily to scale. 4) Marks are indicated against each question.

SECTION A (Fundamentals)

Q1 (10 marks) Solve the system of linear equations: $3x - 2y = 7$ and $2x + y = 4$.

Q2 (8 marks) Find the roots of the quadratic equation: $2x^2 - 5x - 3 = 0$.

Q3 (10 marks) Triangle ABC has sides $AB=7$, $BC=9$, $CA=10$. Find its area using Heron's formula.

Q4 (8 marks) Evaluate exactly: $\sin(75^\circ)$.

SECTION B (Applications)

Q5 (8 marks) The first term of an AP is $a_1 = 7$ and common difference $d = 3$. Find S_{20} (sum of first 20 terms).

Q6 (10 marks) Two fair dice are thrown. Find $P(\text{sum is 9 OR at least one die shows 5})$. Use inclusion-exclusion.

Q7 (12 marks) Find the equation of the circle passing through the points $(1,2)$, $(3,4)$, and $(5,2)$.
