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(Department of Education).

INTERMEDIATE CERTIFICATE EXAMINATION, 1956.

ELEMENTARY MATHEMATICS (Geometry). FOR GIRLS ONLY.

THURSDAY, 7th JUNE.—MORNING, 10 TO 12.

All questions to be answered.

All questions carry equal marks.

1. Prove that parallelograms on the same base and between the same parallels are equal in area.
2. (i) AB is a diameter of a circle and AC is any chord through A . Prove that AB is greater than AC .
(ii) Prove that equal chords in a circle are equidistant from the centre.
3. In a triangle ABC the sides AB and AC are equal. Prove that the line which bisects the angle BAC bisects the side BC at right angles.
4. Prove that the diagonals of a parallelogram bisect each other. Construct a parallelogram $ABCD$ such that $AB=2''$, the diagonal $AC=3''$ and the diagonal $BD=2''$. [No proof is required but construction lines should be clearly shown.]
5. (a) P is any point on the bisector of an angle BAC : prove that P is equidistant from AB and AC .
(b) Show, with proof, how to inscribe a circle in a given triangle.
6. Prove that the angles made by a tangent to a circle with a chord drawn from the point of contact are respectively equal to the angles in the alternate segments of the circle.
A triangle ABC is inscribed in a circle. If the side BC is parallel to the tangent to the circle at A , prove $AB=AC$.