

“ Geometrical proofs of the following algebraic identities :—

$$k(a + b + c) = ka + kb + kc$$

$$(a + b)^2 = a^2 + 2ab + b^2$$

$$(a - b)^2 = a^2 - 2ab + b^2$$

$$a^2 - b^2 = (a + b)(a - b)$$

“ The square on a side of a triangle is greater than or less than the sum of the squares on the other two sides, according as the angle contained by those sides is obtuse or acute. The difference is twice the rectangle contained by one of the two sides and the projection on it of the other.

“ Loci :—

“ The locus of points equidistant from two fixed points is the perpendicular bisector of the line joining the two fixed points.

“ The locus of points equidistant from two intersecting straight lines consists of the pair of straight lines which bisect the angles between the two given lines.

“ The Circle :—

“ A straight line, drawn from the centre of the circle to bisect a chord which is not a diameter, is at right angles to the chord ; conversely, the perpendicular to a chord from the centre bisects the chord.

“ There is one circle, and one only, which passes through three given points not in a straight line.

“ In equal circles (or in the same circle), (i) if two arcs subtend equal angles at the centres, they are equal ; (ii) conversely, if two arcs are equal, they subtend equal angles at the centre.

“ In equal circles (or in the same circle), (i) if two chords are equal, they cut off equal arcs ; (ii) conversely, if two arcs are equal, the chords of the arcs are equal.

“ Equal chords of a circle are equidistant from the centre ; and the converse.

“ The tangent at any point of a circle and the radius through the point are perpendicular to one another.

“ If two circles touch, the point of contact lies on the straight line through the centres.

“ The angle which an arc of a circle subtends at the centre is double that which it subtends at any point on the remaining part of the circumference.

“ Angles in the same segment of a circle are equal ; and, if the line joining two points subtends equal angles at two other points on the same side of it, the four points lie on a circle.

“ The angle in a semicircle is a right angle ; the angle in a segment greater than a semicircle is less than a right angle ; and the angle in a segment less than a semicircle is greater than a right angle.

“ The opposite angles of any quadrilateral inscribed in a circle are supplementary ; and the converse.

“ If a straight line touch a circle, and from the point of contact a chord be drawn, the angles which this chord makes with the tangent are equal to the angles in the alternate segments.

“ If two chords of a circle intersect either inside or outside the circle, the rectangle contained by the parts of the one is equal to the rectangle contained by the parts of the other.

“ Any proof of a proposition will be accepted which appears to the examiners to form part of a systematic treatment of the subject : the order in which the theorems are stated is not imposed as the sequence of their treatment.

“ In the proof of theorems and deductions from them, the use of hypothetical constructions will be permitted. Proofs which are applicable only to commensurable magnitudes will be accepted.

13. By revoking clause 16 and substituting the following :—

“ 16. (1) Every student of Division A, C, or D (if the Minister so requires), and the parent, guardian, or some other person approved by the Minister, shall enter into a bond with His Majesty the King in the sum of £250 conditioned for the due completion by the student of his course of training, whether as a student or a probationary assistant, and also for the completion within the time prescribed of such service as a teacher as is prescribed in a public school, in a secondary or technical school,