9. *ACB* is an arc of a circle, *CE* a tangent at *C*, meeting the chord *AB* produced in *E* and *AD* is a perpendicular to *AB* meeting the tangent *CE* in *D*. Prove that if *C* be the middle point of *DE* the arc *AC* is equal to twice the arc *CB*.

10. *AGB* is the diameter of the circle whose centre is *C*. *D* is the middle point of *CB*. *DE* at right angles to *CB* terminates in the circumference at *E*. Prove that the square on *DE* is equal to three times the square on *DB*.

C.

11. From a given point without a given circle to draw a tangent to the circle.

12. If *ABCD* be a quadrilateral circumscribing a circle, the sum of two opposite sides must equal the sum of the other two.

13. If a straight line, falling on two other straight lines, make the alternate angles equal to one another, then the straight lines shall be parallel.

14. To describe a square that shall be equal to a given rectilineal figure.

15. *ABCDEF* is a cyclic hexagon (one inscribed in a circle) and *AB* is parallel to its opposite side *DE*, and *BC* is parallel to its opposite *EF*; prove that *DC* is parallel to *AF*.

HONOR MATRICULATION.

1. To inscribe a circle in a given equilateral and equiangular pentagon.

Prove that an equiangular circumscribed polygon is regular.

2. If a straight line be divided into any two parts, the square on the whole line is equal to the sum of the squares on the two parts together with twice the rectangle contained by the two parts.

ABC is a right angled triangle right-angled at *C*, and *CD* is a perpendicular from *C* on *AB*. Prove that the square on the sum of *AB* and *CD* is greater than the square on the sum of *AC* and *CB* by the square on *CD*.

3. In equal circles angles at the centres, or at the circumferences which stand on equal arcs, are equal.

If *A*, *B*, *C*, be three points in the circumference of a circle, and *D* and *E* the middle points of the arcs *AB* and *AC*; then if the straight line *DE* intersect the chords *AB* and *AC* in the points *F* and *G*, the straight line *AF* is equal to *AG*.

4. To inscribe a circle in a given triangle.

Inscribe a circle in a sector of a given circle.

5. If four right lines be proportional the rectangle contained by the extremes is equal to the rectangle contained by the means.

The rectangle contained by two sides of a triangle is equal to the rectangle contained by the perpendicular on the third side from the vertex opposite this third side and the diameter of the circumscribed circle.

6. To divide a given undivided line similarly to a given divided line.

To divide a given line (*a*) internally, (*b*) externally, in the ratio of two given lines.

7. Similar triangles are to one another in the duplicate ratio of their homologous sides.

Express the area of a triangle in terms of the medians of the triangle.

HISTORY AND GEOGRAPHY.

NOTE.—*Only five questions in all are to be answered by any candidate, but one of them must be* EITHER *question* 4 OR *question* 8.

1. Give a sketch of the characters and careers of Colet and Erasmus, and of their influence upon the educational and religious awakening which marked the earlier years of the sixteenth century.

2. "Cromwell is in fact the first English minister in whom we can trace through the whole period of his rule, the steady working out of a great and definite purpose."—*Green.*

Give a sketch of the character and career of Thomas Cromwell, and show what his "great and definite purpose" was, and to what extent and in what ways he succeeded in effecting it.

3. Give an account of the origin, character, and influence of the Elizabethan Drama, and sketch briefly the life, character, and dra-