

8. The opposite angles of any quadrilateral figure inscribed in a circle are together equal to two right angles.

Prove also that the sum of the angles in the four segments of the circle exterior to the quadrilateral is equal to six right angles.

9. Cut off a segment from a given circle which shall contain an angle equal to a given rectilineal angle.

Divide a circle into two segments, such that the angle in one of them shall be five times the angle in the other.

10. Describe an isosceles triangle having each of the angles at the base double of the third angle.

If A be the vertex, and BD the base of the constructed triangle, D being one of the points of intersection of the two circles employed in the construction, and E the other, and AE be drawn, meeting BD produced in F, prove that EAB is another isosceles triangle of the same kind.

11. The sides about the equal angles of equiangular triangles are proportionals, and those sides which are opposite to the equal angles are homologous.

Apply this proposition to prove that the rectangle contained by the segments of any chord passing through a given point within a circle is constant.

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