

321. Shew that no rectangle except a square can be described about a circle.

322. Describe a circle about a given rectangle.

323. If tangents be drawn through the extremities of two diameters of a circle the parallelogram thus formed will be a rhombus.

IV. 10.

324. Shew that the angle ACD in the figure of IV. 10 is equal to three times the angle at the vertex of the triangle.

325. Shew that in the figure of IV. 10 there are two triangles which possess the required property: shew that there is also an isosceles triangle whose equal angles are each one third part of the third angle.

326. Shew that the base of the triangle in IV. 10 is equal to the side of a regular pentagon inscribed in the smaller circle of the figure.

327. On a given straight line as base describe an isosceles triangle having the third angle treble of each of the angles at the base.

328. In the figure of IV. 10 suppose the two circles to cut again at E : then DE is equal to DC .

329. If A be the vertex and BD the base of the constructed triangle in IV. 10, D being one of the two points of intersection of the two circles employed in the construction, and E the other, and AE be drawn meeting BD produced at G , shew that GAB is another isosceles triangle of the same kind.

330. In the figure of IV. 10 if the two equal chords of the smaller circle be produced to cut the larger, and these points of section be joined, another triangle will be formed having the property required by the proposition.

331. In the figure of IV. 10 suppose the two circles to cut again at E ; join AE , CE , and produce AE , BD to meet at G : then $CDGE$ is a parallelogram.

332. Shew that the smaller of the two circles employed in the figure of IV. 10 is equal to the circle described round the required triangle.