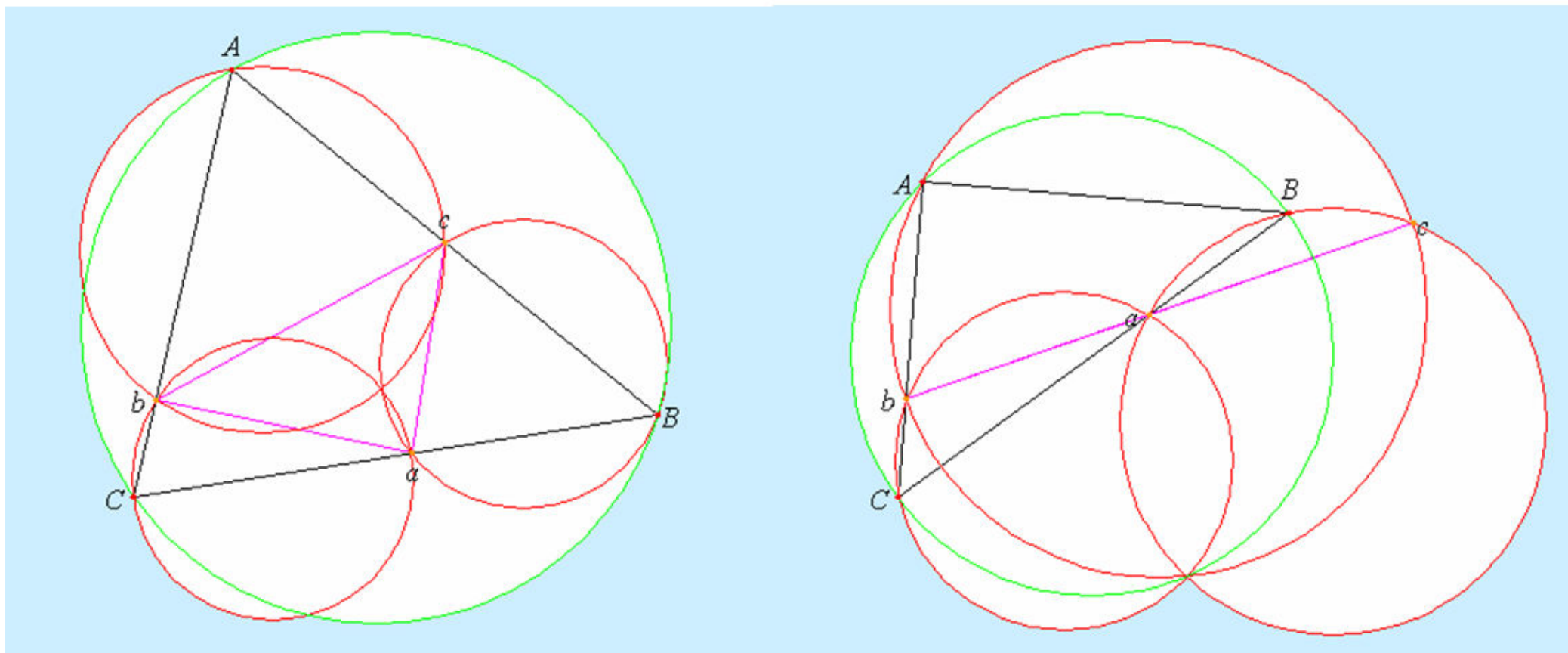




THEOREM OF THE DAY

Miquel's Triangle Theorem *Let A , B and C be the vertices of a triangle and a , b and c be points chosen on sides CB , AC and AB , respectively. Then the circles defined by bAc , cBa and aCb have a common point of intersection. Moreover, if a , b and c are chosen to be collinear then this point lies on the circle defined by A , B and C .*



The above picture shows Miquel's Theorem in action. Changing the size or shape of triangle ABC , or moving any of the side points a , b or c , will move but not destroy the point of intersection of the three red circles. The magenta triangle abc reduces to a line when its vertices are collinear, as on the right, and at this point we find the red circles intersect in a point on the green circle on ABC .

Auguste Miquel was a French mathematician active in the mid-nineteenth century. The point of intersection of the circles in this theorem is known as the 'Miquel Point'.

Java applet

Web link: kskedlaya.org/geometryunbound/, see section 1.2 of "notes from August 1999" (under "Non-GFDL").

Further reading: *Episodes in Nineteenth and Twentieth Century Euclidean Geometry*, by Ross Honsberger, The Mathematical Association of America, 1996.

