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Previous studies investigated students' multifaceted conceptions of angle and their difficulties with connecting angle measure to arcs or circles. Contributing to the existing literature, our study investigated three undergraduate students' thinking about angles in the context of circle geometry, specifically their conceptions of central angle and inscribed angle. The design of the study involved three tasks: a pre-test, a proof reading task that demonstrated the proof of the Inscribed Angle Theorem in either dynamic or static version, and a post-test (same as pre-test). Our analysis suggested that students had various conceptions of these angles that either supported or constrained their ability to complete the tasks. Particularly, conceiving the dynamic transformation of both angles, or identifying the common subtended arc shared by a central angle and inscribed angle was helpful for students to identify these angles, while considering angle as area or angle as ray pair constrained their thinking. We will conclude our presentation by discussing the educational implications of our findings. (Received September 19, 2016)