This study investigates the responses to prior knowledge errors that Calculus I instructors make when assessing students. Prior knowledge is operationalized as any skill or understanding that a student requires to successfully navigate through a Calculus I course. A two part qualitative study consisting of student exams and instructor interviews was employed to examine how instructors approach prior knowledge mistakes while evaluating students. Instructors of a summer Calculus I course were interviewed and asked to elaborate on exam grading decisions. Analysis of these interviews were used to develop additional questions for Calculus I instructors of various research and teaching backgrounds. All interviews were analyzed to illuminate common trends and unique assessment strategies among instructors. (Received September 06, 2008)