In this study, we assess the group performance of 970 high school students in mathematics. We use data from The American Mathematics Competitions tests administered at the University of West Florida for five years, 2007-2011, to assess the proficiency level of the participants as a group. We identify areas of strength and weaknesses in high school mathematics for the group. Furthermore, we assess the college readiness of the students in the area of mathematics. Aside from identifying some factors known to affect students’ performance at the high school levels, we offer suggestions on individual and institutional remedies that could be implemented in the 11th and 12th grades in preparation for study in institutions of higher learning. Results of our study could be used to advise grade teachers on the topics that they should emphasize at the various high school grade levels. (Received September 20, 2012)