



## **Points of Interest from *EPAS<sup>®</sup> State of the Nation Report 2007: Mathematics***

**Prepared for the Committee on Education and Labor,  
U.S. House of Representatives  
July 22, 2008**

ACT's new *EPAS State of the Nation Report 2007: Mathematics* examines results in mathematics for the ACT Educational Planning and Assessment System (EPAS) in schools nationwide. The report addresses changes in the performance of eighth, tenth, and twelfth graders in mathematics since 2003. Several notable findings in this report are highlighted below.

**1. Although the class of 2007 slightly improved its readiness for college-level mathematics over that of the class of 2003, more than half of recent high school graduates are still not ready for college-level mathematics.**

According to ACT data, 57 percent of ACT-tested 2007 high school graduates are not prepared to take a credit-bearing, entry-level College Algebra course. This finding suggests that the high school mathematics curriculum is not sufficiently rigorous to guarantee that all students graduate with the essential knowledge and skills needed to succeed in college mathematics coursework.

**2. Fewer 2007 graduates were ready for college-level mathematics than was expected based on their mathematics performance in eighth grade.**

ACT results show that a greater percentage of students is on target to becoming college ready in mathematics in eighth and tenth grades than is actually college ready in twelfth grade. This finding is consistent with recent results of the National Assessment of Educational Progress in mathematics, suggesting that student learning in mathematics appears to regress in high school. These results strongly reaffirm the need to align standards, instruction, and assessment in high school: by identifying the essential standards for college and career readiness, by focusing high school instruction on these standards, and by monitoring student progress with assessments that measure mastery of these standards.

**3. Graduates of the class of 2007 who took a core curriculum in mathematics were more than twice as likely to be ready for college-level mathematics than students who took less than the mathematics core curriculum.**

Our data show that 27 percent of ACT-tested 2007 high school graduates who took a minimum core curriculum in mathematics consisting of Algebra I, Geometry, and Algebra II were ready for a credit-bearing, entry-level College Algebra course, compared to just 13 percent of graduates who took less than those three courses.

**4. Taking higher-level mathematics courses beyond Algebra II in high school appears to increase students' average ACT Mathematics score—regardless of their level of prior achievement in mathematics.**

The more courses students take beyond a minimum core curriculum in mathematics, the greater their level of academic achievement in mathematics. But while it is true that all students can benefit from taking additional mathematics courses in high school, we believe that students should not have to take more and more coursework simply in order to meet minimum standards for college readiness in mathematics.

**5. High school graduates who are ready for college-level mathematics are more likely to enroll in college the fall following graduation, and more likely to re-enroll at the same college their second year, than high school graduates who are not ready for college-level mathematics.**

ACT research shows that when students are ready for college, they are more likely to enroll in college, stay in college, and succeed in first-year college coursework.

## **Recommendations**

Based on these findings, ACT recommends that policymakers support the following actions to help prepare all students for college-level mathematics:

**Make high school core courses in mathematics more rigorous.** Only about 1 in 4 high school graduates taking a minimum core mathematics curriculum consisting of Algebra I, Geometry, and Algebra II are ready for a first-year College Algebra course. The quality and intensity of high school core courses must be strengthened so that students can master the knowledge and skills essential for success in entry-level college mathematics coursework.

**Encourage more students to take a core mathematics curriculum and higher-level mathematics coursework.** Despite the need for greater rigor in the core mathematics curriculum, we cannot ignore that students who take a core curriculum in mathematics are more likely to be ready for college-level mathematics than students who do not take this curriculum, and that students who take higher-level mathematics courses beyond Algebra II are more likely to be ready for college-level mathematics than students who take only the core mathematics curriculum. Increases in coursework preparation are directly related to academic achievement and college and workforce training readiness and success.

**Align the mathematics curriculum with college and workplace readiness standards.** Based on the strong association between college readiness in mathematics and college success for high school graduates, we recommend that states evaluate how well their high school standards reflect the essential skills for success in college or in targeted workforce training programs by comparing their state standards to standards such as ACT's College Readiness Standards™.