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Fall 2013 Assessment

Assessment of SLO #2 for math 181 - Solve trigonometric equations at a beginning level.

**Introduction**

As a department we have noticed that students in math 101-A struggle with solving trigonometric equations. This concept is initially introduced in math 181 and then revisited in math 188. As this is the first time the concept is introduced, the equations are relatively straightforward and use ideas taught in math 151 and math 152. Students will need to master these techniques in a new context in addition to learning some new methods for solving equations. The most difficult form of equations for students in math 181 to solve are those that involve multiple angles.

To determine whether students had a solid understanding of solving basic trigonometric equations I evaluated the results of our chapter 6 and 7 test. The test consisted of 6 trigonometric equations of varying difficulty and requiring various solution methods. Success was gauged as successfully solving more than 4 of the 6 equations (successfully solving 5 or 6 of the equations).

**Results**

25 students took the exam. 16 successfully completed the assessment.

Of the 9 students who did not pass the assessment, 5 passed the course with a C and 1 passed with a B. The other 3 students received a D and an F in the course.

Of the 16 students who successfully completed the assessment, all passed the course. Of those students only one received a grade lower than a B.

**Comments:**

Overall, 64% of the students who took the 4th test of the semester were successful on the assessment. This result is low but the final course grades seem to clarify the results. Students who, at the time of the last chapter test, had an above average understanding of the course content were overwhelmingly successful. This base understanding is essential in being able to successfully solve trigonometric equations. Students who lacked the base understanding were unable to convert the skills they had learned in math 151 and 152 into solving equations when they involve trigonometric functions. Many of the students who withdrew from the course prior to this test lacked this understanding of the base concepts of trigonometry and, probably, wouldn’t have been successful on this assessment. Students who do not understand solving trigonometric equations will need to work hard in math 188 to grasp this concept. The speed in which trigonometry is covered can be overwhelming for those students who do not learn it in math 181. This is an essential concept for success in math 101-A, 101-B, and 101-C and can be an impediment for success in those courses.
Future Considerations:

The beginning concepts of trigonometry are incredibly important to be successful in math 181 and future courses. Success in being able to solve trigonometric equation seems to be predicated on understanding simplifying trigonometric expressions and manipulating expressions using the identities. These skills are essential for solving equations. In the future, I will emphasize the importance of understanding the fundamental concepts. For those students who don’t initially understand the concepts I will work hard to make sure they get the help they need. Several of the students who didn’t successfully complete the assessment are taking my math 188 course and I will be interested to see if they can learn how to solve trigonometric equations when they see it the second time.