

Determination of the Effectiveness of Intermediate Algebra-Accelerated (Math 255) as Preparation for Student Success in a Transferable Mathematics Course

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Background

Saddleback College offers a one-semester intermediate algebra course, Math 253 that is comparable to the traditional one semester intermediate algebra course offered at most California community colleges. At Saddleback College the class is scheduled for 5 hours each week for the duration of the semester. The enforced prerequisite is a grade of C or higher in Beginning Algebra (Math 251) or placement through the College matriculation process. The course description is as follows. "Further study of the real-number system. Open sentences in one variable, polynomials and factoring, systems of linear equations, functions and sequences, rational numbers and functions, irrational and complex numbers, quadratic equations and functions, exponential and logarithmic functions, quadratic relations and systems."

Forty percent of the course content of Intermediate Algebra (Math 253) is also part of the course content of Beginning Algebra (Math 251). The repetition of this material is very helpful for students who struggled to complete beginning algebra or who let significant time pass after completing beginning algebra before enrolling in intermediate algebra. These students benefit from the additional classroom time and increased tuition expense inherent in the intermediate algebra course that results from the repetition of previously studied material. The repetition, it is hoped, allows the student to increase his or her skill with beginning algebra topics and consequently improve the likelihood that the student will complete the intermediate algebra course with a grade of C or higher. The receipt of such a grade allows the student to meet the mathematics competency requirement for an associate degree and to enroll in a transferable mathematics course.

Students who were diligent in their study of beginning algebra and who completed that course with a strong understanding of the course topics do not similarly benefit from the repetition of beginning algebra topics in the intermediate algebra course. These students, who are well prepared for the new topics contained in the intermediate algebra course, have the same expense in time and tuition as students with a weaker preparation without receiving the benefits accrued to those weaker students.

As a means of allowing students, who gained competency in the topics of beginning algebra before enrolling in intermediate algebra, to benefit from their hard work, Saddleback College created the course Intermediate Algebra-Accelerated (Math 255). The content of this course is the 60 percent of the topics of Intermediate Algebra (Math 253) that is not a repetition of beginning algebra material. The course description is as follows. "Accelerated course designed for those with a strong grasp of beginning algebra topics. Because less time is spent on review topics, this course may be more difficult than Math 253. Topics include linear, quadratic, exponential, and logarithmic functions, complex numbers, sequences, series, binomial expansions, quadratic, logarithmic, and exponential equations and nonlinear inequalities.

The enforced prerequisite for Intermediate Algebra-Accelerated (Math 255) is exactly the same as the prerequisite noted above for Intermediate Algebra (Math 253). The class meeting time for Intermediate Algebra-Accelerated (Math 255) is 60 percent of the 5 hours per week used for

Intermediate Algebra (Math 253). Intermediate Algebra-Accelerated (Math 255) is scheduled for 3 hours each week for the duration of the semester

Population

Saddleback College offered 7 class sections of Intermediate Algebra-Accelerated (Math 255) between the Fall 2006 semester and the Spring 2008 semester. Three sections were offered in both fall semesters. Two of those sections were scheduled to meet on Tuesday and Thursday (TTh) mornings and one section was scheduled to meet once a week in the evening on Wednesday. The three class sections offered in both spring semesters were scheduled exactly the same as described for the fall semesters. One class section was offered during the 2007 Summer Session and students met for this class on Tuesday and Thursday (TTh) afternoons.

A total of 160 different individuals received a final grade of either A, B, C, CR(credit), NC(no credit), D, F, or W(withdrawal). As a result of course repetition of Math 255, 9 people received exactly two grades in Math 255 and 1 person received 3 grades. For the purposes of this study, a student was defined to be a person who received a final grade of either A, B, C, CR(credit), NC(no credit), D, F, or W(withdrawal) in a Math 255 class section. Since 10 people received a second grade and one of these individuals received a third grade in Math 255, the population for this study consisted of 171 students,

Results

Distribution of Grades Earned by Students in Intermediate Algebra-Accelerated (Math 255)

Forty-five percent of the 171 students successfully completed Intermediate Algebra-Accelerated (Math 255) with a grade of A, B, C, or CR. Twenty-three percent withdrew from the course and received a final grade of W. The distribution of the grades received by these 171 students was placed in the table below and in the Appendix.

Distribution of Grades Earned by Students in
Intermediate Algebra-Accelerated (Math 255)

Grade in Math 255	Number of Students with this Grade	Percent of Students with this Grade (N = 171)
A	22	13%
B	19	11%
C	30	18%
CR	6	4%
D	7	4%
F	38	22%
NC	9	5%
W	40	23%

Subsequent Mathematics Enrollment for Students Who Withdrew from Intermediate Algebra-Accelerated (Math 255)

Two-thirds of those who withdrew from Intermediate Algebra-Accelerated (Math 255) again enrolled in a mathematics course in the South Orange County Community College District (SOCCCD) before the Fall 2011 semester. Of this group of 26 students, ninety-two percent enrolled in Intermediate Algebra (Math 253) or Intermediate Algebra-Accelerated (Math 255). While none of those who repeated Intermediate Algebra-Accelerated (Math 255) successfully completed the course, 60 percent of those who enrolled in Intermediate Algebra (Math 253) did successfully complete that course with a grade of A, B, C, or CR. The distribution of student enrollment and success over the subsequent mathematics course was placed in the following table and in the Appendix.

Distribution of Subsequent Mathematics Course Enrollment and Success for Students who withdrew from Intermediate Algebra-Accelerated (Math 255)

Title of Subsequent Course	Number of Students Who Received a Grade in the Subsequent Course	Percent That Received an A, B, C, or CR in the Subsequent Course
Intermediate Algebra (Math 253)	20	60%
Interm. Algebra-Acce (Math 255)	4	0%
College Algebra for Brief Calculus (Math 8)	1	0%
Statistics (Math 10)	1	100%

Subsequent Mathematics Course Enrollment and Success for Students Who Earned a Grade of D, F, or NC in Intermediate Algebra-Accelerated (Math 255)

More than two-thirds of the 54 students who received a grade of D, F, or NC in Intermediate Algebra-Accelerated (Math 255) attempted a mathematics course in the SOCCCD before the Fall 2011 semester. Of this group of 37 students, 89 percent enrolled in Intermediate Algebra (Math 253) or Intermediate Algebra-Accelerated (Math 255). While half of those who repeated Intermediate Algebra-Accelerated (Math 255) successfully completed the course, nearly two-thirds of those who enrolled in Intermediate Algebra (Math 253) successfully completed the course with a grade of A, B, C, or CR. The distribution of student enrollment and success over the subsequent mathematics course was placed in the following table and in the Appendix.

Two of this group of 37 students enrolled in Beginning Algebra (Math 251) and one of those students successfully completed that course. Two of this group of 37 students enrolled in a transfer level mathematics class for which Intermediate Algebra (Math 253 or 255) was the prerequisite. The student who enrolled in Mathematics for Liberal Arts Students (Math 105) at Irvine Valley College successfully completed that course, but the student who attempted Trigonometry (Math 124) was not successful.

Distribution of Subsequent Mathematics Course Enrollment and
Success for Students Who Earned a Grade of D, F, or NC in
Intermediate Algebra-Accelerated (Math 255)

Title of Subsequent Course	Number of Students Who Received a Grade in the Subsequent Course	Percent That Received an A, B, C, or CR in the Subsequent Course
Beginning Algebra (Math 251)	2	50%
Intermediate Algebra (Math 253)	25	64%
Interm. Algebra-Acce (Math 255)	8	50%
Math for Liberal Arts Students (Math 105)	1	100%
Trigonometry (Math 124)	1	0%

Subsequent Mathematics Course Enrollment and Success for Students Who Earned
a Grade of A, B, C, or CR in Intermediate Algebra-Accelerated (Math 255)

Eighty-three percent of the 77 students who received the grade of A, B, C, or CR in Intermediate Algebra-Accelerated (Math 255) attempted a mathematics course in the SOCCCD before the Fall 2011 semester. Of this group of 64 students, one-third took Trigonometry (Math 124), a quarter enrolled in Introduction to Statistics (Math 10), 17 percent enrolled in College Algebra (Math 7), 16 percent took College Algebra for Brief Calculus (Math 8), 3 percent chose Intermediate Algebra (Math 253), 2 percent selected Mathematics for Liberal Arts Students (Math 105) at Irvine Valley College, and 1 student enrolled in Analytic Geometry and Calculus (Math 3B).

Of this group of 64 students, 38 successfully completed the subsequent mathematics course. Overall, the success rate in the subsequent mathematics class for students who successfully completed Intermediate Algebra-Accelerated (Math 255) was 59 percent. The distribution of student enrollment and success over the subsequent mathematics course was placed in the following table and in the Appendix.

Distribution of Subsequent Mathematics Course Enrollment and Success
for Students Who Received a Grade of A, B, C, or CR in
Intermediate Algebra-Accelerated (Math 255)

Title of Subsequent Course	Number of Students Who Received a Grade in the Subsequent Course	Percent That Received an A, B, C, or CR in the Subsequent Course
Mathematics for Liberal Arts Students (Math 105)	1	100%
Statistics (Math 10)	17	65%
Trigonometry (Math 124)	22	64%
College Algebra (Math 7)	11	55%
College Algebra for Brief Calculus (Math 8)	10	50%
Intermediate Algebra (Math 253)	2	50%
Analytic Geometry and Calculus (Math 3B)	1	0%

For courses in which more than one student enrolled, the lowest success rate was fifty percent. Half of the students who chose College Algebra for Brief Calculus (Math 8) or Intermediate Algebra (Math 253) successfully completed that class. It was not clear why a student would enroll in Intermediate Algebra (Math 253) after successfully completing Intermediate

Algebra-Accelerated (Math 255) because either class met the prerequisite for enrollment in a transfer level mathematics class. Both of the students who selected Intermediate Algebra (Math 253) had previously received a grade of C in Intermediate Algebra-Accelerated Math 255). Perhaps they sought to improve their algebra skills before moving on to a transferable mathematics class. One of these students earned a C in Intermediate Algebra (Math 253) and the other earned a D in Intermediate Algebra (Math 253).

Comparison of Student Success in the Subsequent Mathematics Course Between Those Who Completed Intermediate Algebra-Accelerated (Math 255) and Those Who Completed Intermediate Algebra (Math 253)

A baseline study of subsequent mathematics course enrollment and success for the students enrolled in the 24 class sections of Intermediate Algebra (Math 253) offered during the Fall 2002 semester at Saddleback College was completed in October 2006 (ERIC ED493586). A total of 986 students received a final grade of A, B, C, CR(credit), NC(no credit), D, F, or W(withdrawal) in Intermediate Algebra (Math 253) at the conclusion of the Fall 2002 semester. Fifty-two percent of the Intermediate Algebra (Math 253) students successfully completed the course with a grade of A, B, C, or CR (Credit). This success rate was higher than the 45 percent success rate achieved by students enrolled in Intermediate Algebra-Accelerated (Math 255).

The proportion of students who enrolled in a subsequent mathematics course after successful completion of an intermediate algebra course was nearly the same for those who had taken Intermediate Algebra (Math 253) (86 percent) and those who had taken Intermediate Algebra-Accelerated (Math 255) (83 percent). The success rate in the subsequent course was higher for students who completed Intermediate Algebra (Math 253) (65 percent) than for students who completed Intermediate Algebra-Accelerated (Math 255) (59 percent). Nearly half of the Intermediate Algebra (Math 253) cohort enrolled in a college algebra course and these students had a higher success rate (78 percent) in those courses than the Intermediate Algebra-Accelerated (Math 255) students (52 percent). On the other hand, over half of the Intermediate Algebra-Accelerated (Math 255) students enrolled in either Statistics or Trigonometry and they had a higher success rate (64 percent) in those courses than the Intermediate Algebra (Math 253) students (53%). The distribution of success rates over the various subsequent mathematics courses chosen by students who successfully completed an intermediate algebra class was placed in the table below.

Distribution of Subsequent Mathematics Course Success for Students Who Earned a Grade of A, B, C, or CR in Intermediate Algebra (Math 253) or Intermediate Algebra-Accelerated (Math 255)

Title of Subsequent Course	Math 253 Students	Math 255 Students
College Algebra (Math 7)	85% (N=124)	55% (N=11)
College Algebra for Brief Calculus (Math 8)	65% (N=78)	50% (N=10)
Finite Math (Math 9)	75% (N=4)	No Students
Statistics (Math 10)	54% (N=149)	65% (N=17)
Trigonometry (Math 124)	52% (N=77)	64% (N=22)
Mathematics for Liberal Arts Students (Math 105)	92% (N = 13)	100% (N=1)
Intermediate Algebra (Math 253)	No Students	50% (N=2)
Pre-calculus (Math 2)	0% (N=1)	No Students
Analytic Geometry and Calculus (Math 3B)	No Students	0% (N=1)

Comparison of class size for sections of Intermediate Algebra (Math 253) and Intermediate Algebra-Accelerated (Math 255)

A total of 171 students received a final grade of either A, B, C, CR(credit), NC(no credit), D, F, or W(withdrawal) in the 7 class sections of Intermediate-Algebra Accelerated (Math 255). The mean enrollment per section was 24 students. The baseline Intermediate Algebra (Math 253) cohort of Fall, 2002 was composed of 986 students enrolled in 24 sections. The mean enrollment per section was 41. The average enrollment in a class section of Intermediate Algebra (Math 253) was over seventy percent higher than the average enrollment of an Intermediate-Algebra Accelerated (Math 255) class section.

Comparison of the Instructional Cost Per student Between Intermediate Algebra-Accelerated (Math 255) and Intermediate Algebra (Math 253)

Arbitrarily, suppose the cost of the instructor for one class section of Intermediate Algebra (Math 253) was \$5,000. Since the mean class enrollment was 41 students, the average instructional cost per student would be

$$\frac{\$5,000}{41} = \$121.95$$

The number of hours of student contact for one class section of Intermediate Algebra-Accelerated (Math 255) was 60 percent of the number of hours of student contact for a section of Intermediate Algebra (Math 253). Consequently the cost of the instructor for one class section of Intermediate Algebra-Accelerated (Math 255) based on the arbitrarily set cost for Intermediate Algebra (Math 253) would be $60\% \times \$5,000 = \3000 . Since the mean class enrollment was 24 students, the average instructional cost per student would be

$$\frac{\$3,000}{24} = \$125.00$$

As a result the average instructional cost for a student in Intermediate Algebra-Accelerated (Math 255) was 2.4% greater than the cost of an Intermediate Algebra (Math 253) student.

Conclusion

Saddleback College students who successfully completed Intermediate Algebra-Accelerated (Math 255) were as prepared for success in a subsequent transferable mathematics class as were students who successfully completed Intermediate Algebra (Math 253). The average enrollment in a class section of Intermediate-Algebra-Accelerated (Math 255) was far less than the average enrollment in a class section of Intermediate Algebra (Math 253). Although there was a large disparity between the mean number of students enrolled per class section of Intermediate Algebra-Accelerated (Math 255) and the mean number of students enrolled per class section of Intermediate Algebra (Math 253), the instructional cost borne by the South Orange County Community College District was essentially the same for students enrolled in either class.

Discussion

Student Success

From a student learning perspective, Intermediate Algebra-Accelerated (Math 255) prepared students for success in their subsequent mathematics course as well as Intermediate Algebra (Math 253). Although acceptable on

its face, this result was a disappointment for the proponents of Intermediate Algebra-Accelerated (Math 255). Because the Math 255 course was designed for students with a solid foundation in beginning algebra, the course proponents felt that a high success rate in intermediate algebra-Accelerated would naturally follow. Further, the proponents expected that a strong background in beginning algebra together with success in Intermediate Algebra-Accelerated (Math 255) would presage nearly certain success in the subsequent mathematics course of the student's choice. The results did not confirm these expectations.

Recall that the enforced prerequisite for Intermediate Algebra-Accelerated (Math 255) was exactly the same as that for Intermediate Algebra (Math 253). It was not possible to enforce a prerequisite that was "a grade of B or higher in beginning algebra." Further, no research existed that would allow for the creation of different matriculation cut scores for Intermediate Algebra-Accelerated (Math 255) and Intermediate Algebra (Math 253).

Since both courses drew from the same population of students, it was hoped that the course title and catalog description would cause each student to select the class that was most appropriate for them. The course title for Intermediate Algebra-Accelerated (Math 255) included the word "Accelerated" with the hope of catching the attention of the faint of heart. Further, the course description noted that the course was designed for students with a strong background in beginning algebra and that it may be more difficult than Intermediate Algebra (Math 253).

The proponents of the course were probably overly optimistic about the degree to which the course title and catalog description would correctly influence student selection of Intermediate Algebra-Accelerated (Math 255). This selection process required that the student had an accurate self-assessment of her or his proficiency with beginning algebra topics. Many basic skills level community college students have an unrealistically high opinion of their proficiency of beginning algebra. They hold this view despite their score on the College placement exam and their grade in the beginning algebra course.

While an inflated self-assessment of beginning algebra competency should favor the selection of Intermediate Algebra-Accelerated (Math 255) by most students, there are countervailing characteristics of community college students also in play during the class selection process. Most community college students don't like mathematics courses and they won't voluntarily take any course that is perceived to be more difficult than another available option.

The combination of these conflicting influences made it difficult for Intermediate Algebra-Accelerated (Math 255) to attract its target population. Several students who had little chance of success enrolled in Intermediate Algebra-Accelerated (Math 255). For example, it is known that one student enrolled in Intermediate Algebra-Accelerated (Math 255) simply because he was barred from enrollment in Intermediate Algebra (Math 253) because of the excessive number of times he had previously failed to successfully complete that course. There is anecdotal evidence that excellent beginning algebra students were made anxious by the title and/or catalog description for Intermediate Algebra-Accelerated (Math 255) and enrolled in Intermediate Algebra (Math 253) instead. Many strong Beginning Algebra (Math 251) students underestimated their beginning algebra skills. They studied very hard to achieve their proficiency of beginning algebra and hesitated to voluntarily enroll in an intermediate algebra course that announced in its catalog description that it may be more difficult than Intermediate Algebra (Math 253).

Although the results of this study showed that the success rate for Intermediate Algebra-Accelerated (Math 255) students was a bit less than the success rate for students enrolled in Intermediate Algebra (Math 253), proponents of Intermediate Algebra-Accelerated (Math 255) continued to believe that the success rate for students in that course would be much

higher if the enrolled students came from the population for which it was designed. In order for the characteristics of the students enrolled in the Math 255 course to be that envisioned by the course proponents, access to the Math 255 course by unqualified students must be discouraged. Further, those students who earned an A grade or a B grade in Beginning Algebra (Math 251) must feel that Intermediate Algebra-Accelerated (Math 255) is their best available course option.

Observations from the Course Creation Process

At the beginning of the development of the course that became Intermediate Algebra-Accelerated (Math 255), the title "Intermediate Algebra Essentials" and course identification Math 260 were given strong consideration. Although the proposed catalog description indicated that the course may be more difficult than Intermediate Algebra (Math 253) and was designed for those who did not want the review of beginning algebra topics, there was concern that students would interpret the title to mean that Intermediate Algebra Essentials (Math 260) was an abbreviated version of Intermediate Algebra (Math 253). Since it was not possible to use "a grade of B or higher in beginning algebra" as the enforced prerequisite for Intermediate Algebra Essentials (Math 260) and because community college students generally have an unrealistic opinion of their algebra skills, it was felt that the very students who most needed the repeated material from beginning algebra would enroll in Intermediate Algebra Essentials (Math 260) and thereby avoid the much needed work on those topics.

The course title was changed to Intermediate Algebra-Fast Paced and the proposed catalog description was modified to include the note that this was a fast paced class. Of course this revised title did not accurately reflect the nature of the course. The class was not being offered over a shorter time span than a full semester. In fact the class was a somewhat slowed down version of Intermediate Algebra (Math 253). The intermediate algebra topics of Intermediate Algebra (Math 253) (i.e. the topics not previously presented in beginning algebra) were offered over a period of time that was approximately 60 percent of the semester while students were given the entire semester to complete those topics in the Intermediate Algebra Essentials (Math 260) class.

Despite this slight technical inaccuracy the title and catalog description changes were made to dissuade students with weak beginning algebra skills from enrolling in the course. The course proponents reasoned that the students, for whom the course was designed, would see through the specific words used in the title and recognize the value of satisfying the requirement for an intermediate algebra course with a class that met only 3 hours each week.

The "new course proposal" for Intermediate-Algebra Fast Paced (Math 260) was submitted to the college curriculum review and approval process. The subcommittee in charge of the initial stage of the review process required the course identification be changed to Math 255 in order to keep the identification numbers for the various pre-transfer algebra courses closely packed: 251, 253, 255.

The review subcommittee also changed the proposed title to Intermediate Algebra-Accelerated. Of course this name was an even less accurate depiction of the course than the submitted name that used the words "Fast Paced." The subcommittee did not explain why they thought the course outline required the speed of covering the course topics to increase as the weeks of the semester passed.

The "new course proposal" for Intermediate Algebra-Accelerated (Math 255) advanced to the curriculum committee as a whole for further review and approval. During the committee discussion, a representative of the nursing department gave a prophetic warning. She questioned the wisdom of the words in the catalog description that Intermediate Algebra-Accelerated (Math 255) may be more difficult than the otherwise equivalent Intermediate Algebra

(Math 253). She reported that the nursing department had previously created a course for which the catalog description indicated the course had a difficulty level greater than an available alternative course. She added that students did not enroll in that nursing course in sufficient numbers to allow it to continue to be part of the curriculum.

In spite of the warning from the nursing department and the fact that the course title and catalog description did not accurately reflect the difference between Intermediate Algebra-Accelerated (Math 255) and Intermediate Algebra (Math 253), the course proponents did not ask for a delay in the consideration of Intermediate Algebra-Accelerated (Math 255). They optimistically (arrogantly?) relied on their previous reasoning that students, for whom Intermediate Algebra-Accelerated (Math 255) was the appropriate course, would see through whatever title or catalog description was chosen for the course and recognize the value of satisfying the requirement for an intermediate algebra course with a class that met 3 hours per week rather than 5 hours per week. The request to add Intermediate Algebra-Accelerated (Math 255) to the College curriculum was approved by the curriculum committee.

Instructional Cost Per Student

While there is little that can be done to reduce the instructional cost per Intermediate Algebra (Math 253) student (short of a very unpleasant contract negotiation), the instructional cost per Intermediate Algebra-Accelerated (Math 255) student can be reduced to 60 percent of the cost of a Intermediate Algebra (Math 253) student if a way can be found to increase the enrollment per section of Intermediate Algebra-Accelerated (Math 255) to a level equivalent to that of the Intermediate Algebra (Math 253) class sections.

Recommendations

It is recommended that the title for Intermediate Algebra-Accelerated be changed to Intermediate Algebra Essentials. It is recommended that the catalog description for this course be the following. "Recommended for those who received a grade of A or B in beginning algebra. Complex numbers, relations and functions, linear functions, quadratic functions, exponential functions, logarithmic functions, sequences and series, and the binomial theorem."

APPENDIX

Distribution of Intermediate Algebra Accelerated (Math 255) Students Categorized by the Grade Earned in Math 255 and the Subsequent Mathematics Course Taken in the South Orange County Community College District

The number of students in each cell that successfully completed the subsequent course is noted in parentheses. For example, 4 students received the grade of B in Intermediate Algebra - Accelerated (Math 255) and took College Algebra (Math 7) as their next mathematics course. Of this group of 4 students, 2 completed College Algebra (Math 7) with a grade of A, B, C, or CR(credit)

Grade in Math 255	No Math Class	Subsequent Mathematics Class										Row Totals
		Math 3B	Math 7	Math 8	Math 10	Math 105	Math 124	Math 251	Math 253	Math 255		
A	6	1 (0)	2 (1)	4 (4)	3 (3)	--	6 (5)	--	--	--	22	
B	4	--	4 (2)	1 (0)	5 (3)	--	5 (3)	--	--	--	19	
C	3	--	5 (3)	4 (0)	9 (5)	--	7 (2)	--	2 (1)	--	30	
CR	--	--	--	1 (1)	--	1 (1)	4 (4)	--	--	--	6	
NC	2	--	--	--	--	1 (1)	--	--	3 (3)	3 (1)	9	
D	1	--	--	--	--	--	--	--	4 (2)	2 (2)	7	
F	14	--	--	--	--	--	1 (0)	2 (1)	18 (11)	3 (1)	38	
W	14	--	--	1 (0)	1 (1)	--	--	--	20 (12)	4 (0)	40	
Column Totals	44	1	11	11	18	2	23	2	47	12	171	

Course List:

Math 3B Analytic Geometry and Calculus	Math 124 Trigonometry
Math 7 College Algebra	Math 251 Beginning Algebra
Math 8 College Algebra for Brief Calculus	Math 253 Intermediate Algebra
Math 10 Introduction to Statistics	Math 255 Intermediate Algebra - Accelerated
Math 105 Mathematics for Liberal Arts Students	Math 351 Pre-Algebra Mathematics