Assessment Date: Spring 2013

Faculty Name(s): Andy Bloom

1. Course Name and Number:

Math 151 – Algebra I

2. All Course SLOs from the Course Outline of Record:

Upon successful completion of math 151, student will be able to:

1. Manipulate algebraic functions, including linear, quadratic, and rational functions, at a beginning level.
2. Solve linear inequalities and linear, quadratic, and rational equations at a beginning level.
3. Use algebraic functions to solve application problems at a beginning level.
4. Use technology to graph linear functions and analyze the qualitative behavior of the graphs of linear functions.

3. Specific Course SLO(s) assessed as part of this project:

| 2.  | Solve linear inequalities and linear, quadratic, and rational equations at a beginning level. |

4. Assessment strategy or tool used in the assessment. (Describe below, and if applicable copy/paste any additional related documents at end of this form (i.e. Rubric, score sheet, test questions, essay assignment, etc.):

I wanted to examine student success in successfully solving linear equations at three points during the semester. The first assessment came while we were covering the material in class. The assessment was a ten question take home assignment for which students were given the opportunity to get help from any outside source they wanted. Six out of the ten questions were identified as the assessment and success was gauged to be correctly answering 4 out of the 6 questions. They were encouraged to bring the assessment to the MLC, office hours, were given time to work on it in class, and told they could work together. The second assessment was given as a part of the chapter test in class. Six questions were asked that were similar in form to the original 6 questions but the numbers were changed. Success was again gauged to be correctly answering 4 out of 6 questions. The final assessment was given on the final exam. Four questions were asked on the final and success was gauged to be correctly answering 3 out of 4 questions.

NOTE: This will usually consist of things you are already using to evaluate student work, i.e. Final Exam questions, Final Essay, Final Presentation or Culminating Project, other Assignments, Portfolio Evaluation, Performance Assessment, Department Testing, Pre and Post
Tests, Vendor or Industry Certification Examinations, Indirect Assessments (Student Surveys, Focus Group Discussions, Interviews), etc.

5. Specific aspects of the assessment tool which link up to specific Course SLOs being assessed (i.e. Which specific test questions measured which Course SLOs? Note: May describe with #4 above):

In the graded assignment (assessment #1) questions 3-10 addressed the SLO being assessed. Two of the questions were not utilized because they were of redundant form to other questions. The questions assessed were #3, 6, 7, 8, 9, 10. See Assignment 1 questions following write-up. On the chapter test (assessment #2) question 5, parts (a) – (f), addressed the SLO. There were two different versions of the exam, but the questions were designed to require the same methodology to arrive at a solution, despite having different solutions. See Test 1a and Test 1b questions following the write-up. On the final exam (assessment #3), question 10 (a) – (d) addressed the SLO. See Final Exam questions following the write-up.

6. Results and analysis of the data. (Explain below and if applicable copy/paste any related documents, i.e. spreadsheets with data at the end of this document):

<table>
<thead>
<tr>
<th></th>
<th>Assessment 1</th>
<th>Assessment 2</th>
<th>Assessment 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Successful</td>
<td>26</td>
<td>24</td>
<td>30</td>
</tr>
<tr>
<td>Not Successful</td>
<td>9</td>
<td>11</td>
<td>5</td>
</tr>
</tbody>
</table>

- Of the 35 students who completed the course, only 2 were unsuccessful on the assessment over all three attempts. Each received a non-passing grade in the class.
- 18 students were successful on the assessment all three times. 2 of these students received marks below passing for the course, but it is worth mentioning that each failed to turn in a substantial amount of work for the course.
- Of the remaining 15 students, 10 students were unsuccessful on only one of the assessments. Two of those students failed to turn in the first assessment and that was their only unsuccessful attempt.
- 2 students were successful on the take-home assessment and unsuccessful on the two tested assessments. Neither passed the class.

Comments:
I was initially surprised at the students who were unsuccessful on the first assessment. They were encouraged to get help and ask questions and were given time to work together in and out of class. Many felt they didn’t need to ask for help and realized, upon getting the assessment back, that they did have questions. Five students were unsuccessful on the initial assessment and passed the second, under more pressure and tighter time constraint. I believe for them, the initial assessment played a valuable role in their understanding of the content and their desire to get help when needed.

Seven students passed the first assessment and were unsuccessful when assessed on the chapter test. In all likelihood, those students received a great deal of help on the first assessment and
were not aware of their lack of understanding moving forward. Only one of those students completed the class with a passing grade. That student, though, recognized her deficiencies after the chapter test and spent a great deal of time with a tutor and in office hours getting help. She worked very hard for the grade she earned.

I have always felt it was important to assess SLOs on the final exam in order to assure that students have learned what they were intended to learn at the completion of the semester rather than at the time information was being presented. At the same time, students may have done enough work during the semester to allow themselves to earn a poor grade on the final exam while still earning a high grade in the class. For those students the final may not be studied for as diligently as other tests. SLOs given only on the final may not represent a student’s understanding of the material. As a result, I have changed the way I weight my class and how the final counts. I average the highest and lowest test grade and use that average to replace the lowest test score. This does not allow one good test score to significantly alter a student’s grade. Because I will use the final as an average if it is higher than the other scores, students are motivated to study for the final. I believe this is what led to the superior success rate, in conjunction with the greater focus put on solving linear equations over the last month of the semester.

7. Describe any faculty dialogue that occurred as part of the assessment process (i.e. Were results shared at a department meeting? Was there discussion about changing any SLOs? Etc.):

8. Next steps (i.e. any planned revisions to curriculum or teaching strategies to promote student success, future assessment plans, etc.):

In the future, it may be beneficial to meet with students who do poorly on the initial assessment in one-on-one meetings to encourage them to seek additional help. This topic is addressed early in the semester and the early intervention may help students to develop the necessary skills to be successful in this and future math classes. Additionally, it may be helpful to ask students to complete the assessment on their own and then go over their assignments together in groups. This may lead to weaker students seeing, and understanding, their mistakes and realizing how much they need to do to understand the material.

9. Results of implemented changes, if available at this time:

Results not available at this time.
Assessment #1 SLO Questions (Assignment #1):

1. Solve: \(-x/4 = 3\)
2. Solve: \(3(-2n + 4) = -30\)
3. Solve: \(2(x + 3) - 5 = 5x - 3(1 + x)\)
4. Solve: \((x-3)/3 + x/2 = 1/4\)
5. Solve: \(0.08 + 0.4x - 0.8 = 2\)
6. Solve: \(-4(5x - 2) = -12x + 4 - 8x + 4\)

Assessment #2 SLO Questions (Test 1A):

1. Solve: \(-x/4 = 3\)
2. Solve: \(4y - 8 + y = 2y - 6\)
3. Solve: \(3(r + 1) - 2 = 2(r + 1)+r\)
4. Solve: \((2x)/3 = (3x)/4 - 1/2\)
5. Solve: \(0.6x+ 1.4 = 0.36x - 3.4\)
6. Solve: \(2(3b + 2)+5 - 4b = 3(2b - 2) - 1\)

Assessment #2 SLO Questions (Test 1B):

1. Solve: \(-x/4 = 3\)
2. Solve: \(5x - 7 + 2x = 4x - 6\)
3. Solve: \(4(x + 1) -2 = 3(x + 2)+x\)
4. Solve: \((2x)/3 = (3x)/4 - 1/2\)
5. Solve: \(0.4x+ 1.8 = 0.24x - 1.4\)
6. Solve: \(3(2b + 2)+1 - 2b = 3(2b - 2) - 7\)

Assessment #3 SLO Questions (Final Exam):

1. Solve: \(5x + 3 = 2x + 12\)
2. Solve: \(2x + 3(x - 4) = 2(x - 3)\)
3. Solve: \((2x)/3 = x/2 - 2\)
4. Solve: \(-2x - 3(x - 2) + 8 = 2 - x\)