Eastern New Mexico University -- Mathematics – College Algebra Competencies (Spr 2009)

This assessment was completed in 2 phases.

Phase 1: During the last week of class Math 113 students were asked to answer the following questions. There were 35 students in attendance.

The summary responses are under each question below. An interesting observation made by the students: "These questions are essentially the same one, just rephrased." Many students commented that the competencies were addressed in every chapter.

Math 113 Students,

Taking into consideration every chapter that we have discussed this semester:

- Chapter 3, Fair Division
- Chapter 4, Apportionment
- Chapter 5, Euler Circuits
- Chapter 6, The Traveling Salesman Problem
- Chapter 7, The Mathematics of Networks
- Chapter 10, The Mathematics of Population Growth
- Chapter 9, Spiral Growth in Nature

Please answer the following questions to the best of your ability. Give particular examples to explain your response.

Students will display, analyze, and interpret data. Students should: 1a. Discriminate among different types of data displays for the most effective presentation.
1b. Draw conclusions from the data represented.
1c. Analyze the implication of the conclusion to real life situations.

1. A) Please indicate a chapter or chapters that Competency 1a was addressed. Give an example of a problem that would ask you to discriminate among different types of data displays for the most effective presentation.
   If you do not feel this was addressed, respond with not applicable or N/A.

Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 9	Chapter 10	Most	N/A	No response
4	3	11	3	2	1	3	1	14	1

   b) Again, indicate a chapter or chapters that Competency 1b was addressed. Give an example of a problem that asks you to draw conclusions from the data represented.

If this competency was not addressed, respond with not applicable or N/A.

Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 9	Chapter 10	Most	N/A	No response
2	1	11	10	2	1	4	1	13	3

c) In which chapter or chapters of Math 113 did you analyze the implication of the analysis of a set of data to real life situations? Respond with N/A, if this was not addressed.

Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 9	Chapter 10	Most	N/A	No response
18	10	12	15	10	7	19	0	2	

2. Students will demonstrate knowledge of problem-solving strategies. Students should: 2a. For a given problem, gather and organize relevant information.
2b. Choose an effective strategy to solve the problem.
2c. Express and reflect on the reasonableness of the solution to the problem.

2. A) Cite a chapter or chapters studied in Math 113 that you gathered and organized relevant information in order to solve a problem. Give a short example of the problem(s).

Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 9	Chapter 10	Most	N/A	None
14	14	15	16	8	5	11	0	0	1

b) For the problem example in 2a, what strategy did you use to solve the problem?

Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 9	Chapter 10	Most	N/A	No response
10	13	6	10	4	3	6	0		1

c) Did the solution obtained, seem reasonable? Explain your yes or no response.

Yes	No	Sometimes	No response
27	2	4	2

3. Students will construct valid mathematical explanations.

Students should: Use mathematics to model and explain real life problems.

3. In which chapter or chapters did your Math 113 class use mathematics to model and explain real life problems. Please describe the problem.

Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 9	Chapter 10	Most	N/A	No response
12	8	11	18	7	7	22	3	0	0

4. Students will display an understanding of the development of mathematics.

Students should: Recognize that math has evolved over centuries and that our current body of knowledge has been built upon contributions of many people and cultures over time.

Give an example from one or more of the chapters we studied this semester that addressed competency 4.

Chapter 3	Chapter 4	Chapter 5	Chapter 6	Chapter 7	Chapter 9	Chapter 10	Most	Don't know	No response
9	18	14	12	9	24	9	0	1	2

5. Students will demonstrate an appreciation for the extent, application, and beauty of mathematics.

Students should:

Recognize the inherent value of mathematical concepts, their connection to structures in nature, and their implications for everyday life.

This competency was not assessed this semester.