

MATH 141

Spring 2005

General Education Assessment of Outcome #8

Introduction:

A goal of general education is to "develop the mathematical and quantitative skills necessary for calculation, analysis, and problem solving and the ability to use a computer when appropriate."

Proposed outcome #8:

To enable students to develop and appreciate the mathematical skills and language necessary for problem solving.

Proposed sub-goals:

1. Understand the language of mathematics and basic mathematical concepts and operations.
2. Use abstract ideas and symbols to describe, translate, analyze and solve problems.
3. Apply mathematical concepts to the solution of real-life problems.
4. Recognize patterns and mathematical relationships.
5. Understand and appreciate the value of mathematics in society.

Methods:

Each question corresponded with one or more of the sub-goals listed above.

Question 1: $\sqrt{x-1} + 1 = x$ (Sub-goals: 1, 2 and 4)

Question 2: Solve the system (Sub-goals: 1, 2 and 4)

$$\begin{aligned}2x + 2y - 3z &= -3 \\x + 2y + 2z &= 11 \\3x + 5y - 2z &= 7\end{aligned}$$

Question 3: Is -3^2 equal to 9 or -9? (Sub-goal: 1)

Question 4: Given $f(x) = 3x + 4$: find each item below (Sub-goal: 1)

- a. $f(1)$
- b. $f(a+1)$
- c. $f(x+1)$

Question 5: Solve: Donald can get to work in one-quarter of an hour if he drives. He can get to work along the same path in three-quarters of an hour if he rides his bike. His average driving speed is 20 mph faster than his average biking speed. What is his average driving speed? (Sub-goals: 2 and 3)

Results:**Percent Correct**

	Question 1	Question 2	Question 3	Question 4	Question 5	
Section						Avg. % (section)
01	57%	36%	36%	71%	0%	40%
02	38%	58%	65%	77%	42%	56%
09	46%	14%	61%	82%	50%	51%
10	57%	7%	46%	79%	45%	45%
11	38%	54%	62%	92%	57%	57%
Avg. % (question)	47%	34%	54%	80%	33%	

Conclusion:

On February 6, 2006 a meeting was held between Peter Lampe, a representative from the math department who coordinated the assessment for both 2004 and 2005, John Stone (Interim Dean of the School of Graduate Studies and Continuing Education) and David Travis (Associate Dean for Assessment). Although it was agreed that it was too early to reach any substantial conclusions from these assessment results, the findings do suggest that students in Math 141 do not consistently accomplished the sub-goals listed above. The large variance in responses across sections and question-types implies that inconsistencies may exist across sections in areas emphasized (i.e. word problems versus equation-based problems). Further discussions are anticipated between the chair of the math department, 141 instructors, and the Associate Dean for Assessment.