

MATH 141

Spring 2004

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	93%	33%	70%	90%	37%	65%
03	55%	31%	48%	83%	21%	48%
07	54%	25%	54%	82%	14%	46%
08	64%	40%	20%	72%	20%	43%
19	57%	57%	43%	86%	71%	63%
21	68%	71%	23%	81%	16%	52%
Avg. % (question)	65%	43%	43%	82%	30%	

CONCLUSIONS:

Conclusions are discussed at the end of the 2005 report.