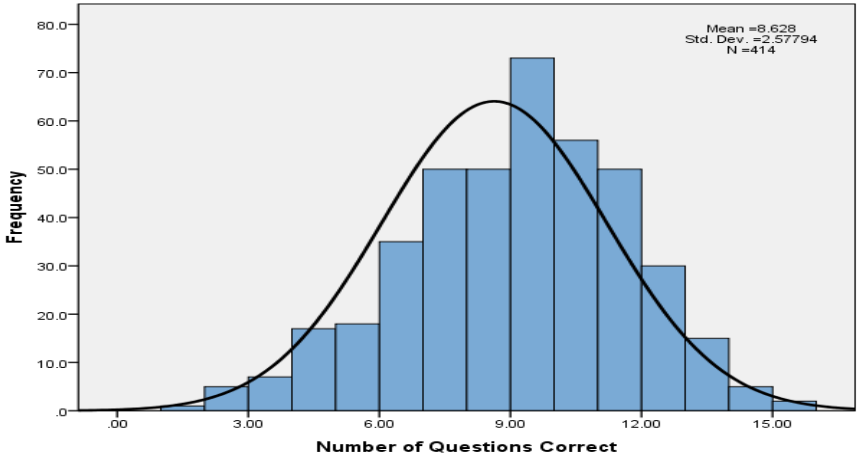
UNCW UNIVERSITY of NORTH CAROLINA WILMINGTON

Learning Goal: Foundational Knowledge

Date: Spring 2009
What was assessed: 414 students in 16 sections of MAT 111
How it was assessed: 15-item multiple-choice subsection on MAT 111 final exam

Results:



Test Item	% Answering Correctly
10 (y-intercept rational function)	81.4
9 (x-intercept rational function)	76.1
5 (transformation of a function)	74.6
1 (slope of line)	70.8
8 (horizontal asymptote)	70.3
7 (vertical asymptote)	68.6
4 (change of base logs)	68.1
6 (horizontal asymptote power *f*)	67.1
11 (domain log function)	63.3
12 (end behavior of a function)	50.7
3 (domain radical function)	49.8
15 (graph of quadratic function)	37.2
2 (symmetry of function)	32.9
14 (function of a function)	29.5
13 (graph of polynomial function)	22.5

Findings:

- Overall scores on the 15-question subsection were normally distributed.
- The mean and median translate to percentage scores of 57.5% and 60%, respectively.
- Students performed well on graphing linear equations.
- Students had most difficulty with graphing quadratic and other polynomial functions, functions of functions, and symmetry of functions.

Discussion:

It is important to note that this analysis included only a 15-question subsection of the 34-item final exam, the main purpose of which was to perform item analysis of these questions.

Recommendations:

The following recommendations will make the findings most useful for program improvement:

1. Establish a standard for overall performance and determine if the standard has been met.
2. Establish a list of specific concepts (outcomes) for which all students should demonstrate understanding. Analyze the item by item results to determine if an adequate percentage of students have demonstrated understanding of the most important course concepts.