

**REPORT ON THE MAT-014 (ALGEBRA II)
Day (D1, D2) and Evening (E) sections**

**FINAL EXAM ITEM ANALYSIS
SPRING 2009**

Submitted by Claire Vassiliadis

An item analysis of the Algebra II (Mat-014) Day and Evening Final for the Spring 2009 semester was run. I had to manually put all versions together based on objectives instead of specific number of a problem because each version had different order of questions. Responses from a total of **260** students were used, as indicated on the attached chart.

RESULTS

% of wrong resp.	Section-Objective
23/260 = 8.8%	1.1.4 Simplify expressions by combining like terms
12/260 = 4.6%	1.3.3 Factor the difference of two squares
64/260 = 24.6%	1.4.2 Factor trinomials of the form $ax^2 + bx + c$
9/260 = 3.5%	1.5.3 Solve linear equations with parentheses
96/260 = 36.9%	1.5.4 Solve linear equations with fractions
81/260 = 31.2%	1.6.4 Solve applications of area
39/260 = 15%	2.1.3 Use the distance formula
66/260 = 25.4%	2.1.4 Use midpoint formula
53/260 = 20.4%	2.2.2 Graph a line
73/260 = 28.1%	2.3.1 Determine the slope given two points on the line
39/260 = 15%	2.3.2 Write linear eq. in slope-intercept form & graph
106/260 = 40.8%	2.4.2 Determine if relations are functions
25/260 = 9.6%	2.4.3 Evaluate functions
46/260 = 17.7%	2.4.4 Identify the domains of functions
72/260 = 27.7%	3.1.2 Write eq. of horizontal or vertical lines
100/260 = 38.5%	3.1.3 Write eq. of lines using point-slope form
90/260 = 34.6%	3.1.3 Write eq of line perpendicular to another given a point
84/260 = 32.3%	3.2.4 Solve applications with similar triangles
109/260 = 41.9%	3.3.3 Solve distance-rate problems
45/260 = 17.3%	3.4.2 Solve linear inequalities in one variable (double ineq.)
97/260 = 37.3%	3.4.3 Solve linear inequalities in one variable (double ineq.)
64/260 = 24.6%	3.5.1 Solve absolute value equations
83/260 = 31.9%	3.5.2 Solve inequalities with absolute values
106/260 = 40.8%	4.1.4 Solve the system of linear equations
44/260 = 16.9%	5.1.1 Use properties of exponents to simplify expressions
91/260 = 35%	5.2.2 Use properties of exponents to simplify expressions
82/260 = 31.5%	5.3.1 Simplify radicals by removing factors
88/260 = 33.8%	5.4.1 Multiply radicals
195/260 = 75%	5.4.3 Simplify quotients w/ radicals by rationalizing denom

89/260 = 34.2%	5.5.1 Solve radical equations
69/260 = 26.5%	5.6.1 Write the square root of negative in i-form
116/260 = 44.6%	6.1.1 Solve quadratic equations
147/260 = 56.5%	6.3.2 Use quadratic formula to solve quadratic equations
122/260 = 46.9%	6.3.3 Determine the types of solutions of quadratic eq.
110/260 = 42.3%	6.4.1 Solve applications of quadratic equations w/ consec. integers
43/260 = 16.5%	7.2.1 Multiply rational expressions
101/260 = 38.8%	7.3.2 Add/Subtr. Rational expr. w/ unlike denominators
116/260 = 44.6%	7.3.3 Simplify complex fractions
28/260 = 10.8%	7.4.1 Divide polynomials by monomials
176/260 = 67.7%	7.5.2 Solve rational eq. w/ variable denominators

SUMMARY

It was found that more than 30% of the students in Mat-014 had difficulty with the following skills on the Final exam:

% of wrong resp.	Section-Objective
195/260 = 75%	5.4.3 Simplify quotients w/ radicals by rationalizing denom
176/260 = 67.7%	7.5.2 Solve rational eq. w/ variable denominators
147/260 = 56.5%	6.3.2 Use quadratic formula to solve quadratic equations
122/260 = 46.9%	6.3.3 Determine the types of solutions of quadratic eq.
116/260 = 44.6%	6.1.1 Solve quadratic equations
116/260 = 44.6%	7.3.3 Simplify complex fractions
110/260 = 42.3%	6.4.1 Solve applications of quadratic equations w/ consec. integers
109/260 = 41.9%	3.3.3 Solve distance-rate problems
106/260 = 40.8%	2.4.2 Determine if relations are functions
106/260 = 40.8%	4.1.4 Solve the system of linear equations
101/260 = 38.8%	7.3.2 Add/Subtr. Rational expr. w/ unlike denominators
100/260 = 38.5%	3.1.3 Write eq. of lines using point-slope form
97/260 = 37.3%	3.4.3 Solve linear inequalities in one variable (double ineq.)
96/260 = 36.9%	1.5.4 Solve linear equations with fractions
91/260 = 35%	5.2.2 Use properties of exponents to simplify expressions
90/260 = 34.6%	3.1.3 Write eq of line perpendicular to another given a point
89/260 = 34.2%	5.5.1 Solve radical equations
88/260 = 33.8%	5.4.1 Multiply radicals
84/260 = 32.3%	3.2.4 Solve applications with similar triangles
83/260 = 31.9%	3.5.2 Solve inequalities with absolute values
82/260 = 31.5%	5.3.1 Simplify radicals by removing factors
81/260 = 31.2%	1.6.4 Solve applications of area