The number of final exam questions corresponding to each objective is indicated in bold.

1. Solve multistep linear equations, including those involving removing parentheses, combining like terms, using decimals, and clearing fractions. Also solve those with no solution or all real numbers as solutions. (3)

2. Solve a formula for a given variable. (1)

3. Solve application problems that require setting up and solving linear equations. (2)

4. Solve linear inequalities, including those involving removing parentheses and combining like terms. Graph solutions on the number line, write solutions as inequalities, and write solutions in set-builder notation. (2)

5. Given an equation or graph of a line, find points on the line. [Students should be able to find solutions of two-variable linear equations, and find points including, but not limited to, the x- and y-intercepts of a line.] (2)

6. Given an equation of a line, sketch its graph. Identify equations corresponding to the graphs of horizontal or vertical lines. Identify quadrants in which certain points lie. (3)

7. Use the laws of exponents to rewrite and simplify expressions involving exponents. (2)

8. Perform the operations of addition, subtraction, multiplication, and division on single-variable and multi-variable polynomials. (4)

9. Evaluate polynomial expressions. (2)

10. Multiply and divide numbers in scientific notation, and convert between scientific notation and standard decimal notation. (2)

11. Factor (over the integers) trinomials of the form $ax^2 + bx + c$. (1)

12. Factor by grouping and factor differences of two squares. (2)

13. Factor sums and differences of two cubes. (1)

14. Solve quadratic equations by factoring. (1)

15. Solve application problems that require setting up and solving quadratic equations. (1)

16. Perform the operations of addition, subtraction, multiplication, and division on rational expressions, and simplify complex rational expressions. (2)

17. Recognize that a rational expression is not defined when its denominator is zero, and find all input values for which a rational expression is not defined. (1)

18. Solve rational equations by converting to polynomial equations and factoring. (1)

19. Solve problems that require setting up and solving rational equations. (1)

20. Simplify and evaluate expressions and solve conceptual problems involving absolute value. [Students should be able to solve computational problems involving absolute value, as well as conceptual problems such as: If $x$ is a negative number, then what is the sign of $−|x|$?] (1)