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*Note: The letters and numbers in parentheses following the activity name reference specific Common Core State Standards for Mathematics addressed by the activity*

- 1 Finding the Slope of a Line from its Graph
- 2 Finding the Slope of a Line from Its Equation:  $y = ax + b$
- 3 Finding the Slope of a Line from the Coordinates of Two Points on the Line
- 4 Finding the Slope of a Line Given Its Y-intercept and the Equation of a Perpendicular Line (*G-GPE 5*)
- 5 Finding the Sum of Two Ordered Pairs of Numbers
- 6 Identifying Properties of Real Numbers
- 7 Writing the Ordered Pair of Numbers for the Sum of Two Vectors from their Graphs (*N-VM 4a, 4b*)
- 8 Solving Equations of One Variable (*A-REI 2, 3, and 4*)
- 9 Solving Inequalities of One Variable (*A-REI 3*)
- 10 Simplifying Products of Powers and Radical Expressions (*A-SSE 3c, N-RN 2*)
- 11 Simplifying Powers without Using Fractional Exponents (*A-SSE 3c, N-RN 2*)
- 12 Simplifying Radicals and Products of Radicals (*N-RN 2*)
- 13 Simplifying Sums and Differences of Radicals (*N-RN 2*)
- 14 Factoring Binomials
- 15 Factoring Polynomials (*A-SSE 3a*)
- 16 Solving Quadratic Equations by Factoring
- 17 Finding Quadratic Discriminants; Solving Quadratic Equations by the Quadratic Formula
- 18 Writing Quadratic Equations with Integral Coefficients from their Solution Sets (*A-CED 1*)
- 19 Finding Values of Functions; Interpreting Graphs of Quadratic Functions (*A-REI 10, F-IF 2*)
- 20 Interpreting Graphs of Parabolas, Circles, Ellipses, and Hyperbolas (*A-REI 10, F-IF 2*)
- 21 Simplifying Rational Expressions
- 22 Simplifying Products and Quotients of Rational Expressions
- 23 Simplifying Sums and Differences of Rational Expressions
- 24 Solving Systems of Linear Equations (*A-REI 6*)
- 25 Writing Linear Inequalities from their Graphs (*A-REI 12*)
- 26 Writing One Inequality from the Graph of Two Linear Inequalities (*A-REI 12*)
- 27 Writing Complex Numbers in the Form:  $a + bi$  (*N-CN 1*)
- 28 Writing Complex Numbers Represented by Points in the Complex Plane (*N-CN 4*)
- 29 Writing Products of Complex Numbers In the Form:  $a + bi$  (*N-CN 2*)
- 30 Writing the Quotient of Two Complex Numbers as a Single Complex Number (*N-CN 3*)
- 31 Solving Quadratic Equations with Complex Roots (*A-REI 4b, N-CN 7*)

- 32 Solving Exponential Equations (*A-SSE 3c*)
- 33 Solving Logarithmic Equations (*A-REI 10*)
- 34 Finding Sums of Arithmetic Series
- 35 Finding Sums of Geometric Series
- 36 Finding Determinants of  $2 \times 2$  Matrices
- 37 Finding Determinants of the Sums of  $2 \times 2$  Matrices and also  $3 \times 3$  Matrices (*N-VM 8*)
- 38 Finding Determinants of the Products of  $2 \times 2$  Matrices (*N-VM 8*)
- 39 Finding the Determinant of the Coefficient Matrix of a System of Linear Equations
- 40 Finding the Sum, Difference, and Product of Two Functions; Evaluating Special Functions (*F-BF 1b*)
- 41 Writing Equations of Inverses of Functions from Given Equations of the Functions (*F-BF 4a*)
- 42 Finding Missing Terms in Sequences

Solution Key (See pages following Activity 42.)