

Algebra I - CPM 2011-2012 Benchmark Blueprint

Green Dot Public Schools - CPM

Assessments

Algebra I		1	2	3	4
2.0	Students understand and use such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. They understand and use the rules of exponents. •1: opposites and reciprocals only. For reciprocals, pick one problem that is not a mixed number.	4			3
3.0	Students solve equations and inequalities involving absolute values.				3
4.0	Students simplify expressions before solving linear equations and inequalities in one variable, such as $3(2x - 5) + 4(x - 2) = 12$.	3	4		
5.0	Students solve multistep problems, including word problems, involving linear equations and linear inequalities in one variable and provide justification for each step. •2: only equations		4	3	3
6.0	Students graph a linear equation and compute the x- and y- intercepts (e.g., graph $2x + 6y = 4$). They are also able to sketch the region defined by linear inequality (e.g., they sketch the region defined by $2x + 6y < 4$). •2: only equations •3: only equations		4	3	3
7.0	Students verify that a point lies on a line, given an equation of the line. Students are able to derive linear equations by using the point-slope formula. •1: only verify a point is on a line	3	3	3	
9.0	Students solve a system of two linear equations in two variables algebraically and are able to interpret the answer graphically. Students are able to solve a system of two linear inequalities in two variables and to sketch the solution sets. •2: only equations •3: only equations		5	3	3
10.0	Students add, subtract, multiply, and divide monomials and polynomials. Students solve multistep problems, including word problems, by using these techniques. •1: only add and distribute negative •2: only distribute negative •3: no word problems	4	3	3	
11.0	Students apply basic factoring techniques to second- and simple third-degree polynomials. These techniques include finding a common factor for all terms in a polynomial, recognizing the difference of two squares, and recognizing perfect squares of binomials.			3	3
12.0	Students simplify fractions with polynomials in the numerator and denominator by factoring both and reducing them to the lowest terms.				3
13.0	Students add, subtract, multiply, and divide rational expressions and functions. Students solve both computationally and conceptually challenging problems by using these techniques.				3
14.0	Students solve a quadratic equation by factoring or completing the square.			3	3



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Assessments

Algebra I (continued)		1	2	3	4
15.0	Students apply algebraic techniques to solve rate problems, work problems, and percent mixture problems.				3
19.0	Students know the quadratic formula and are familiar with its proof by completing the square.			3	
20.0	Students use the quadratic formula to find the roots of a second-degree polynomial and to solve quadratic equations.			3	3
21.0	Students graph quadratic functions and know that their roots are the x-intercepts.			3	3
23.0	Students apply quadratic equations to physical problems, such as the motion of an object under the force of gravity.			3	
Total Number of Items		14	23	33	36