

## SOL Alignment and Levels of Cognitive Demand Algebra I

### STANDARD A.4

The student will solve multistep linear and quadratic equations in two variables, including

- a) solving literal equations (formulas) for a given variable;
- b) justifying steps used in simplifying expressions and solving equations, using field properties and axioms of equality that are valid for the set of real numbers and its subsets;
- c) solving quadratic equations algebraically and graphically;
- d) solving multistep linear equations algebraically and graphically;
- e) solving systems of two linear equations in two variables algebraically and graphically; and
- f) solving real-world problems involving equations and systems of equations.

Graphing calculators will be used both as a primary tool in solving problems and to verify algebraic solutions.

- Solve a literal equation (formula) for a specified variable.
- Simplify expressions and solve equations, using the field properties of the real numbers and properties of equality to justify simplification and solution.
- Solve multistep linear equations in one variable.

Problem:	Alignment to standard: Yes/no; SOL bullet	Level of cognitive demand: Low/medium/not aligned	Answer and EKS Correlation:
1	No		Aligns to Sol 7.14 a
2	Yes; b	Low	B and c; bullet 2
3	Yes; a	Low	$\frac{y-b}{x} = m$ ; bullet 1
4	Yes; d	Low	d; bullet 3
5	No		b; grade 6 level problem
6	Yes; d	Medium	A and d; bullet 3
7	Yes; b	Low	Addition Property of Equality ; bullet 2
8	Yes; d	Medium	c ; bullet 3