Use of "Simplify" for ADP Algebra End-of-Course Exams Constructed Response Items

To clarify what is meant on the Algebra End-of-Course exams when the term "simplify" is used in a constructed-response item, sample wording, along with the item type and answer, have been provided below. This is not an exhaustive list but a sample of what students may see on the exam. Also, examples of other directions that may be used instead of "simplify" have been provided on the following page.

Sample Wording	Expression/Equation/Function	What would be expected from the student	Explanation
Write the expression/equation /function in simplest form. Or Simplify your answer/the expression completely.	$(x-3)(x+1)$	x^2-2x-3	Multiplication was performed and like terms were combined.
	$\frac{x\left(x^2-1\right)}{x+1}+x$	x^2	The rational expression in the first term was simplified so that there were no common factors in the numerator and denominator. Then multiplication was performed. Like terms were then combined.
	$\frac{a^3b^2c}{a^5b^{-4}c}$	$\frac{b^6}{a^2}$ or b^6a^{-2}	There are no common factors in the numerator and denominator or uses rules of exponents so that each variable appears only once.
	$-i^2+2i^2+3i^3$	$-1-3i$	There are no powers of i greater than 1. Addition and subtraction were performed.
	$f(g(x))=(x+2)^2+3(x+2)-4$	$f(g(x))=x^2+7x+6$	Multiplication was performed. Like terms were combined.
Write the expression in simplest radical form. Or Simplify your answer/the expression completely.	$\sqrt{300x^2}$	$10\lvert x\rvert\sqrt{3}$	All perfect roots were evaluated.
Write the expression in simplest radical form with no radicals in the denominator.	$\frac{2\sqrt{10}}{\sqrt{6}}-\frac{\sqrt{60}}{2}$	$-\frac{\sqrt{15}}{3}$	There are no integral common factors in the numerator and denominator. The expression is written with no radicals in the denominator. Subtraction was performed. Using only "simplify completely" could yield $\frac{2\sqrt{5}}{\sqrt{3}}$ in the first fraction.
Write the expression in $a+bi$ form.	$\frac{1}{2+3i}$	$\frac{2}{13}-\frac{3}{13}i$	The numerator and denominator were multiplied by the conjugate of the denominator to rewrite the expression in $a+bi$ form.

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Below is a sample of how other wording can be used to direct students to the type of solution(s) they are to write. This is not an exhaustive list. Students are expected to read the item completely and follow directions.

Sample Wording	Expression/Equation/Function	What would be expected from the student
Write the expression such that each variable appears at most once with a positive exponent.	$\frac{a^3b^2c}{a^5b^{-4}c}$	$\frac{b^6}{a^2}$
Write the expression with variables only in the numerator and simplify.	$\frac{a^3b^2c}{a^5b^{-4}c}$	$a^{-2}b^6$

In some items, the student may be given guidance on what is expected but a specific form may not be specified. This often occurs in constructed-response items.

Sample Wording	Expression/Equation/Function	What would be expected from the student	Explanation
Write a quadratic expression to represent the area of the base of the prism.	$V = x^3 - x$ $h = x + 1$	$x(x - 1)$ or $x^2 - x$	Both of these expressions are quadratic and would receive credit. The factored form of the student's answer may be more useful in other parts of the item.
Write a quadratic function that passes through $(-1, 6)$ with x-intercepts at $(2, 0)$ and $(-3, 0)$.	NA	$f(x) = -(x - 2)(x + 3)$ or $f(x) = -x^2 - x + 6$	Both of these functions are quadratic functions meeting the criteria.