MAFS.912.A-CED.1.1 Also assesses MAFS.912.A-REI.2.3 Also assesses MAFS.912.A-CED.1.4	Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions and simple rational, absolute, and exponential functions.* Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law, V = IR, to highlight resistance, R.*
Item Types	Editing Task Choice – May require choosing a correct equation or the correct definition of a variable. Equation Editor – May require creating an equation, an inequality, or a value. GRID – May require dragging and dropping expressions/statements to complete a model. Hot Text – May require dragging and dropping values and/or expressions to create linear equations and inequalities or rearranging equations. Multiple Choice– May require identifying an equation, an inequality, or a value from a list of four choices. Multiselect – May require selecting an equation and identifying a variable. Open Response – May require creating a written explanation.
Clarifications	Students will write an equation in one variable that represents a real-world context. Students will write an inequality in one variable that represents a real-world context. Students will solve a linear equation. Students will solve a linear inequality. Students will solve multi-variable formulas or literal equations for a specific variable. Students will solve formulas and equations with coefficients represented by letters.
Assessment Limits	In items that require the student to write an equation, equations are limited to exponential functions with one translation, linear functions, or quadratic functions.

	Items may include equations or inequalities that contain variables on both sides. In items that require the student to write an exponential function given ordered pairs, at least one pair of consecutive values must be given. In items that require the student to write or solve an inequality, variables are restricted to an exponent of one. Items that involve formulas should not include overused contexts such as Fahrenheit/Celsius or three-dimensional geometry formulas. In items that require the student to solve literal equations and formulas, a linear term should be the term of interest. Items should not require more than four procedural steps to isolate the variable of interest. Items may require the student to recognize equivalent expressions but may not require a student to perform an algebraic operation outside the context of Algebra 1.
Stimulus Attributes	Items assessing A-CED.1.1 and A-CED.1.4 must be placed in real-world context. Items assessing REI.2.3 do not have to be in a real-world context.
Response Attributes	Items assessing REI.2.3 should not require the student to write the equation. Items may require the student to choose an appropriate level of accuracy. Items may require the student to choose and interpret units. For A-CED.1.1 and A-CED.1.4, items may require the student to apply the basic modeling cycle.
Calculator	Neutral

Sample Item	Item Type
	GRID – Hot Spot and Drag and Drop

The table shows a company's income and expenses over the last 7 days.

Day of Week	Income	Expenses
Sun.	$ 169.56	$ 256.25
Mon.	$ 217.61	$ 195.79
Tues.	$ 150.89	$1208.55
Wed.	$ 409.73	$ 709.11
Thurs.	$ 687.45	$ 190.98
Fri.	$1563.09	$ 325.78
Sat.	$1267.92	$ 315.64

The company found that its weekly income and expenses were approximately the same from week to week.

A. Select the correct definition of the variable x.

B. Drag terms to the boxes and symbols to the circles to create an equation that can be solved to approximate the number of weeks it will take for the company's income to be $10,000 more than its expenses.