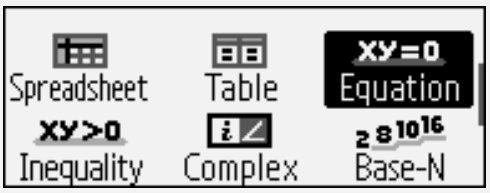
Unit 4: Lesson 14 – Solving More Systems

Activity 14.2: Challenge Yourself

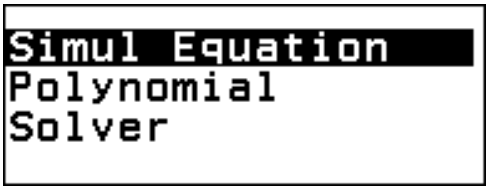
Skill: Use the Simultaneous Equation Solver to check system of equations solutions.

Activity Summary:
Students need to know how to solve a variety of systems of equations algebraically. Students are given a list of systems of equations and asked to choose 3 that are the least difficult to solve, and 3 that are the most difficult to solve. They choose 3 equations to solve; at least one from the least difficult list and one from the most difficult list. Students can check their algebraically found answers using the Simultaneous Equation Solver in the Equation app on the calculator.

1. Turn on the calculator with the ⏻ **- On** button. Press ⌂ **– Home** and then use the arrows to highlight the **Equation app**.

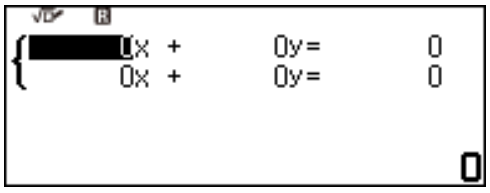


2. Press either OK or EXE to open the **Equation app**. The calculator can find the solutions to **systems of equations** using the **Simul. Equation Solver**.



3. Press either OK or EXE to select. Our systems involve two variables, ***x*** and ***y***, which are unknown.

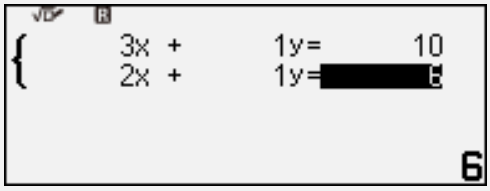
4. Press either OK or EXE to select **2 Unknowns**. Each equation needs to be in **standard form** to be entered into the template of **A*x* + B*y* = C** .

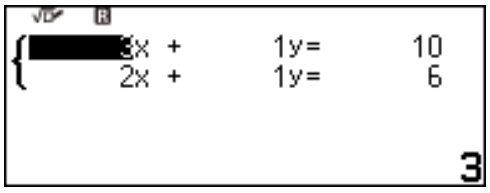
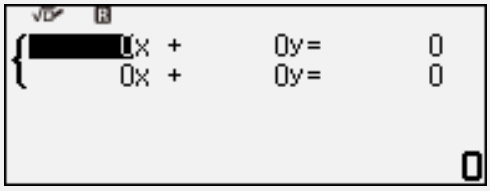
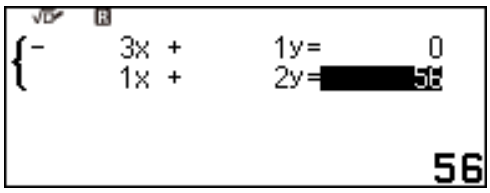


5. Some equations will need to be rearranged to fit the standard form template.

$$D\begin{cases} y = -3x + 10 \\ y = -2x + 6 \end{cases} = D\begin{cases} \mathbf{3}x + \mathbf{1}y = \mathbf{10} \\ \mathbf{2}x + \mathbf{1}y = \mathbf{6} \end{cases}$$

Enter the **bold** numbers into the template by typing each number followed by OK or EXE.



6. Press (OK) or (EXE) again. The ***x*-value** of the solution to the system will be shown.	
7. Press (OK) or (EXE) again. The ***y*-value** of the solution to the system will be shown. The solution to **System D** is ***x* = 4**, ***y* = -2**.	
8. To check another system, press (OK) or (EXE) again to return to the entry screen.	
9. The **coefficients** can be overwritten with the values from the next system or to **clear the template** and start from scratch, press (⤺) followed by either (OK) or (EXE).	
10. In this other example, a **0** is needed when rearranging the equation. $G\begin{cases} y = 3x \\ x = -2y + 56 \end{cases} = G\begin{cases} -\mathbf{3}x + \mathbf{1}y = \mathbf{0} \\ \mathbf{1}x + \mathbf{2}y = \mathbf{56} \end{cases}$ Enter the **bold** numbers into the template by typing each number followed by (OK) or (EXE).	
11. Press (OK) or (EXE) again. The ***x*-value** of the solution to the system will be shown.	
12. Press (OK) or (EXE) again. The ***y*-value** of the solution to the system will be shown. The solution to **System D** is ***x* = 8**, ***y* = 24**.