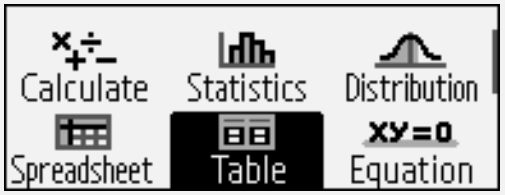
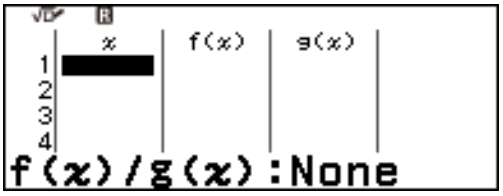
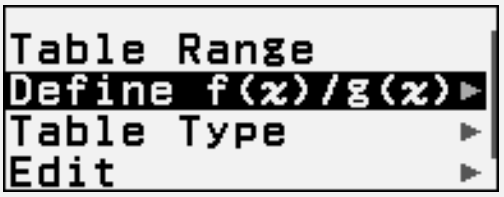
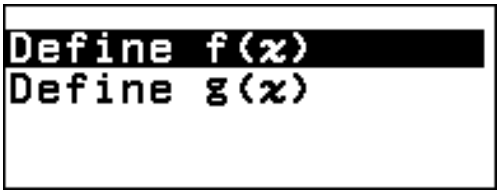
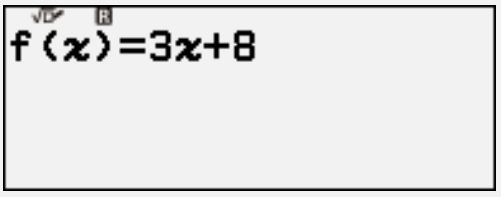
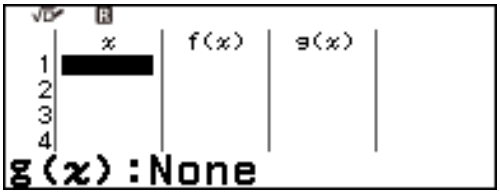
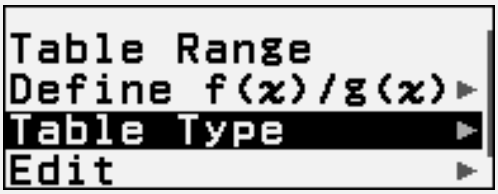
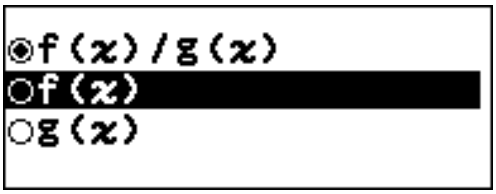
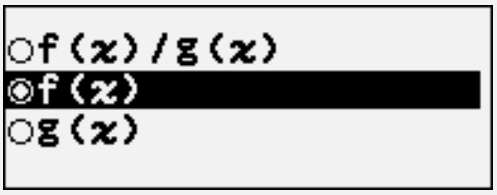
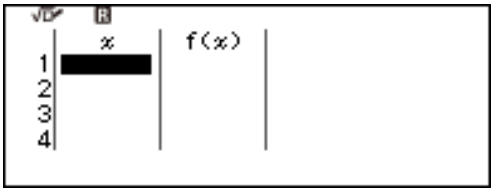
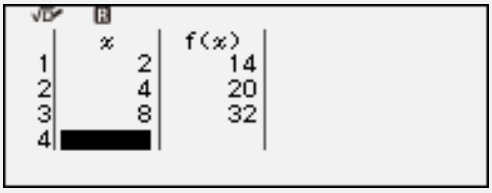
Unit 6: Lesson 1 – Relationships between Quantities

Activity 1.2: Entrance Fees

Skill: Use the Table app to verify if a rule is correct for given points in a word problem.

Activity Summary:
This activity challenges students to find a non-proportional linear relationship to calculate the entrance fee to a park in a vehicle with various numbers of occupants. Given multiple situations, the cost of the vehicle and cost per person can be determined. The Table app on the calculator can be used to test if the rule to calculate the entrance fee to the park is correct.

1. Students can **check their work** for this activity using the **Table app**. When they are ready, turn on the calculator by pressing the ⏻ **- On button**. Press ⌂ **– Home** and then use the **arrow keys** to highlight the **Table app**.	
2. Press either OK or EXE to open the **Table app**. From the information given, a student determined that the **park entrance fee** is **$3 per person** plus **$8 per vehicle**. This can be written as the rule $y = 3x + 8$.	
3. The **function notation** $f(x)$ and $g(x)$ are ways to describe two **different outputs** of y. To **define** $f(x) = 3x + 8$, press ⋯ **– Tools** followed by the **down arrow**, ▼, to highlight **Define f(*x*)/g(*x*)**.	
4. Press either ▶, OK, or EXE.	
5. Press either OK or EXE. Enter the rule by typing 3 x + 8.	

6. Press either (OK) or (EXE) to return to the table.	
7. As we only have one rule, we will remove g(x) from our table by changing the table type. Press (∞) **– Tools** followed by the **down arrow**, (▽), **twice** to highlight **Table Type**.	
8. Press either (▷), (OK), or (EXE). Press the **down arrow**, (▽), to highlight **f(*x*)**.	
9. Press either (OK) or (EXE) to select which will **toggle on** the **radio button** in front of **f(*x*)**.	
10. Press the **back button**, (↩), **twice** to return to the table.	
11. Now in the ***x*-column**, enter the **number of people** in each vehicle from the original problem to see if **f(*x*)**, the **entrance fee**, matches the cost. These costs match those given in the problem, so the equation to calculate the entrance fee is correct.	
12. The other tasks in this activity can also be verified in the table. To find how much a bus with **30** people would be charged, enter **30** for x to find the fee is **$98**. 13. Solving the equation $122 = 3x + 8$ for x gives a solution of $x = 38$. Entering **38** for x verifies the entrance fee for a bus with **38** people is **$122**.