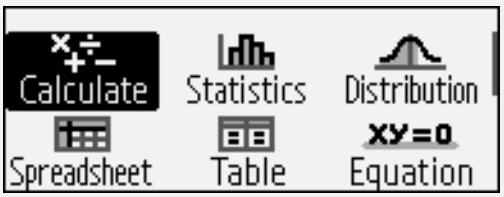
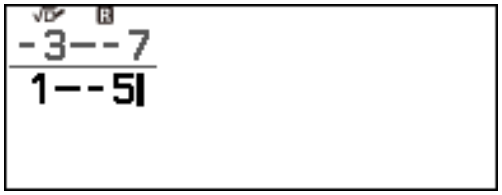
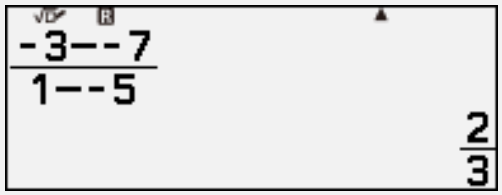
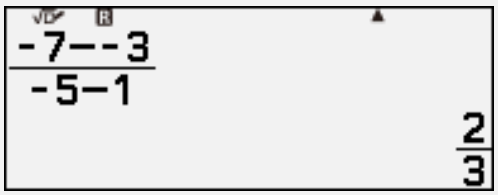
Unit 3: Lesson 11 – Line Designs

Activity 11.3: Calculate the Slope

Skill: Use the Calculate app to find the slope of a line given two points.

Activity Summary:
This task provides students with practice in calculating the slope of a line given two points. At the end of the task, students should realize that the order of the points will not affect the slope result but a certain order (starting with the point to the right) may yield an easier calculation. A quick sketch of the two points is a good way to verify that the sign of your slope is correct. The slope between two points can be entered as one calculation on the calculator which will also show the slope as a simplified fraction.

1. Press ⌂ **– Home** and then use the arrow keys to highlight the **Calculate app** in the top left corner.	
2. Press either OK or EXE to open the **Calculate app**. The first task is to find the slope between the points **(-5,-7)** and **(1,-3)**.	
3. Slope is the ratio of the vertical change to the horizontal change. Press the fraction key, ▤, to start.	
4. In the **numerator**, enter the **vertical change** between the points. In this case, **-3 – -7**. The negative sign is entered using **Shift**, ⇧, then the **subtraction key**, ⊖. Press the **down arrow**, ⌄, to move to the **denominator** to enter the **horizontal change** between the points. In this case, **1 – -5**.	
5. Press either OK or EXE to view the slope between these two points as a **fraction** in **lowest terms**.	

6. Does the order of the points change the slope? Press the fraction key, ▣, but this time enter **-7 – -3** in the numerator and **-5 – 1** in the denominator.	
7. Press either OK or EXE to view the slope. It is the same result. The key is having the values of each point directly above each other in the slope quotient.	
8. The second task is to find the slope between the points **(-10,15)** and **(-8,1)**.	
9. The calculator is usually forgiving if the **subtraction key**, ⊖, is used instead of the **negative (-) key**, (-) ⊖. However, it is recommended to use the correct keys as expressions are entered.	
10. If the **negative key** is used instead of the **subtraction key**, a **Syntax error** message will display.	
11. When a **Syntax error** appears, press either ↩, OK, or EXE to be taken to where the problem occurred in the expression to fix it.	
12. In this case, the **negative symbol (-)** after the **8** needs to be the **subtraction symbol**, **– . Arrow right**, ▷, press **delete**, ◀ and the **subtraction key**, ⊖, to fix.