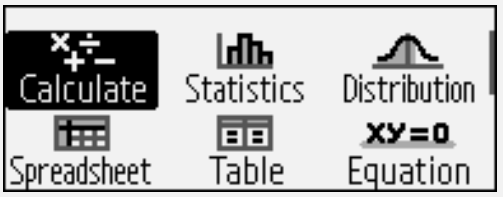
Unit 7: Lesson 6 – What about Other Bases?

Activity 6.3: Matching Equivalent Exponents

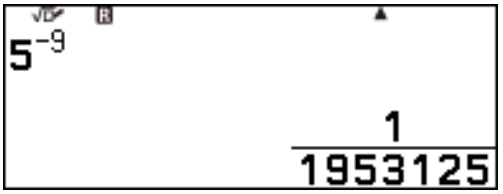
Skill: Use the Calculate app to determine if two expressions are equivalent.

Activity Summary:
This activity encourages students to practice exponent rules by analyzing and identifying which expressions are *not* equivalent to the original expression from two out of four given lists. They are asked to complete this task mentally utilizing different exponent rule strategies. Equivalent expressions will yield equivalent results. Students can check their work by using the Calculate app on the calculator.

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

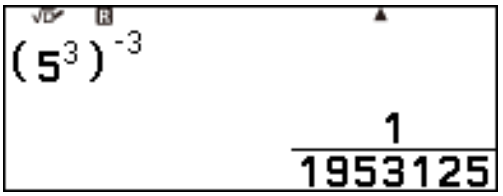


2. Press either OK or EXE to open the **Calculate app**. In the first list, Lin's original expression is $\mathbf{5^{-9}}$. Type 5 ▪ ▲ (−) 9. Press either OK or EXE.



3. **Equivalent expressions** will have equal results. If an expression in the list is *not* equivalent to the original, it will have a different value. To test $\mathbf{-5^9}$, type ▲ (−) 5 ▪ 9. Press either OK or EXE. Since these two expressions have different values, they are *not* equivalent.

4. Another expression in Lin's list is $\mathbf{(5^3)^{-3}}$. Type (5 ▪ 3) ▶) ▪ ▲ (−) 3. Press either OK or EXE. Since the value of this expression matches the original value, this expression is equivalent to Lin's original expression.



5. Another expression in Lin's list that is not equivalent to her original is $\mathbf{(5^3)^{-2}}$. Type (5 ▪ 3 ▶) ▪ ▲ (−) 2. Press either OK or EXE. The remaining expressions in Noah's, Diego's, and Elena's lists can be checked following the examples above for Lin's list.