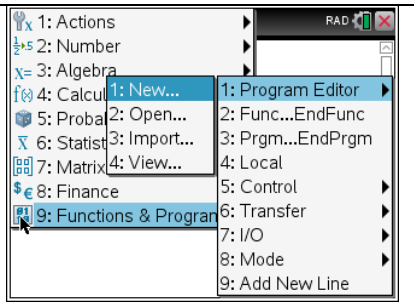
Unit 1: Program Basics | **Application: Evaluate a Formula**

In this Application for Unit 1, you will discover the versatility of the **Disp** statement and develop your own program. Skill Builders for Unit 1 should be completed prior to this activity.

Objectives:

- Embellish **Disp** statements to produce meaningful information using literal strings
- Write your own formula program

A split-screen can be useful to compare program code with the output of the program on a Calculator app.

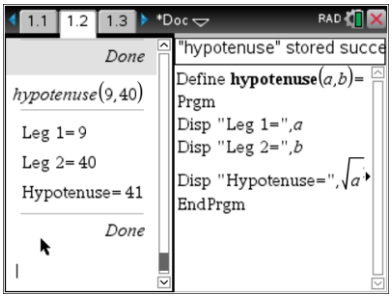


To set up a split-screen page with a Calculator app and a Program Editor:

- Add a Calculator app to your document, or open a **New Document** and add a Calculator app.
- Press **menu > Functions & Programs > Program Editor > New…**.

When working on a split-screen page, press **ctrl+tab** to move from one application to the other. Alternatively, click in an application to make it the 'active' application. The border of that app becomes a bold rectangle.

The **Disp** statement can display more than one item at a time.

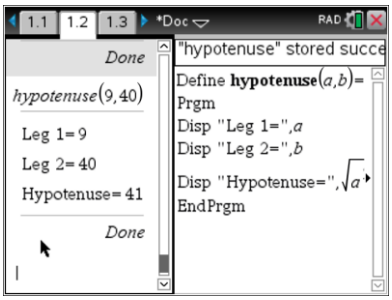


Study the image at the right in which the hypotenuse program has been modified. The program 'echoes' the arguments **a** and **b** with appropriate labels and then displays the calculated hypotenuse length, also appropriately labeled.

Note: The items in quotes are called 'literal strings'. A string is a collection of characters 'strung' together.

When writing the program, remember to use the comma as a separator between the items to be displayed. There should be a comma in between the text in quotes and the value *a* in the expression.

Disp "Leg 1 =", a



After you edit your program, press **ctrl+R** to 'Check Syntax & Store' the program, and prepare to run the program in the Calculator app.

When you run the program, remember to provide two values inside the parentheses as arguments for the program.

Your Task

Write a program that takes one or more arguments and then displays the result of a calculation based on those argument(s).

The calculation can be any formula. Here are a few suggestions:

Area of a geometric shape:
- Square: $side^2$
- Triangle: ½*b*h
- Circle: $pi*r^2$
- Trapezoid: ½*(b1+b2)*h

Volume of a solid:
- Cube: $side^3$
- Square Pyramid: $1/3*side^2*height$
- Sphere: $4/3*pi*r^3$

Simple interest: A=P+P*R*T

Compound interest: $A=P*(1+r/n)^{n*t}$

The program should clearly label the values of the arguments (input) and the result of the calculation (output) using strings.

> **Teacher Tip:** The list of formulas to use is provided as a suggestion. You may choose to use topics from your current curriculum. The goal is to keep the computation simple at this stage with arguments used for input and *Disp* used for output, with the computation in the *Disp* statement. Storing values into variables within the program will not be introduced until the next unit (Unit 2) because it requires a discussion of local and global variables and the scope of variables in general. The TI-Nspire CX allows the use of multi-character identifiers, so words like *side* and *height* can be used as arguments.