

Calculate

Unit 1 – Skill Builder 2 - Worksheet

7 8 9 10 11 12



Introduction

Programs can be used to complete single or multiple calculations.



It is assumed that you have completed **Unit 1 Programming Basics - Skill Builder 2**. You may return to the Skill Builder exercise at any time to review the instructions.



Display

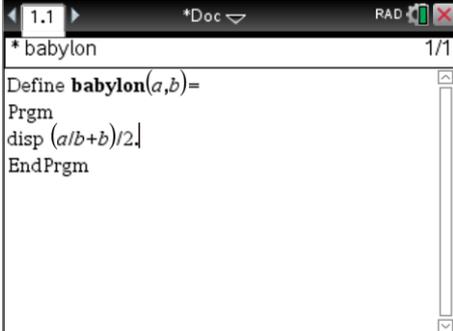
Start a new document and create a program titled:

Babylon

Use a and b as the variables and enter the line of code shown opposite, make sure a decimal point (.) follows the 2.

When you have finished use Ctrl + B to compile and save the program. Insert a calculator application and run your program.

Babylon(95,10)



```
* babylon 1/1
Define babylon( $a,b$ )=
Prgm
disp ( $a/b+b$ )/2.
EndPrgm
```

Question: 1.

Write down the output of the program when 95 and 10 are entered as the values.

Question: 2.

Run the program again as: Babylon(95,#) where # represents the value calculated in Question 1.



The previous answer contains a lot of decimal places. You can copy (Ctrl + C) and paste (Ctrl + V) the entire answer into the appropriate section.

Question: 3.

Run the program again as: Babylon(95, #) where # represents the value calculated in Question 2.

Question: 4.

What do you notice about the answers to Question 2 and Question 3?

Question: 5.

Repeat the process one more time: Babylon(95, #) where # is the answer to Question 3.

Question: 6.

Square the answer to Question 5. What is this algorithm doing?

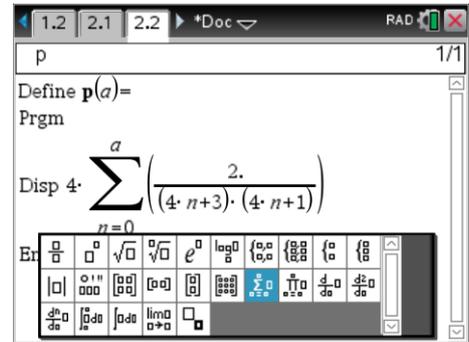
Question: 7.

Repeat the above process for Babylon(200,15). After 4 or 5 steps, square your answer. Does this confirm your response to Question 6?

Insert a new Problem and create a new program called: p

This program requires only a single value. The program computes the sum of a series of numbers, the quantity of terms is determined by the value of 'n'. The summation command is available from the 'maths' tools menu obtained by pressing: $\left[\frac{\square}{\square} \right]$. (As shown opposite)

Make sure the decimal place is included after the 2 in the numerator.



Question: 8.

Run the program from a calculator application and determine the result when $n = 10$.

Question: 9.

Run the program from a calculator application and determine the result when $n = 100$.

Question: 10.

Run the program from a calculator application and determine the result when $n = 500$. What value do you think this computation is approximating?



Make sure you save your file [Ctrl + S]. The Babylon function will be used in the next worksheet.