**bc (basic calculator) utility in Bash Linux**

1. If bc is not loaded in your environment type (no quotes):

“apt-get install bc".

2. Now typing "bc" at command prompt will get you into the bc environment. You can try various commands and mathematical expressions and see the results. Type “quit” to exit bc.

3. Here is a sample tutorial on bc but there are many good references.

<https://www.geeksforgeeks.org/bc-command-linux-examples/>

4. Try the following command: a=`echo "scale=3;9 + 7/3" | bc`; echo $a

Explanation:

a. We are assigning the Linux command in back quotes (` `) to the variable "a".

b. The double quotes (" ") are used for the string to be piped (pipe = '|' character) to the bc utility. The left side of the pipe feeds the calculator.

c. The scale attribute is part of bc and gives the result of the calculation to 3 decimal places.

d. Then with the second statement ''echo $a" print the result to stdout - the terminal.

e. Another way to get the same result without the scale attribute for bc is using the Linux printf function with a format string:

a=`echo "scale=3;9 + 7/3" | bc`; printf “%.3f” $a For a list of format strings and more explanation please see any documentation on printf.

The format string “.3f” states the variable is floating point and print 3 decimal places.

5. There are many operations and switches, attributes like 'scale' you can use with the bc command. These can be found in any documentation on bc. Linux is not very versatile when it comes to mathematical operations but bc is a nice utility to help with this deficiency.