

## Basic Bash Arithmetic

### 1.

Arithmetic expansion provides a powerful tool for performing (integer) arithmetic operations in scripts. Translating a string into a numerical expression is relatively straightforward using backticks, double parentheses, or let.

Source: (<https://www.tldp.org/LDP/abs/html/arithexp.html> )

`${(EXPRESSION)}` is arithmetic expansion

Example:

```
#!/bin/bash
var1=1
var2=2
var3=3
ansvar4=0
ansvar5=0

echo "Variable 1 has a value of $var1"
echo "Variable 2 has a value of $var2"
echo "Variable 3 has a value of $var3"

ansvar1=$(( $var1+$var2+$var3 ))
echo "Answer for sum of the three variables is: $ansvar1"

ansvar4=$(( $ansvar1 / $var3 ))
echo "Ans for calculation no.2 is = $ansvar4"
```

### 2. Another way

You can also use the external program **bc** in bash scripts as covered in our last module

*(bc – An arbitrary precision calculator language – source bc man page)*

Example:

```
echo 5+4 | bc -l
```

Calculate 5 + 4 and Prints to Screen

More examples:

```
avg=$((echo "$sum / $total" | bc -l))
```

```
avg=$((echo "$avg*100" | bc -l))
```