

BASH Math Cheatsheet

Mathematical forms	
Function	Notes
VAL=\$((4+4))	Assigns result of expression to a variable
VAL=\$(echo "scale=2; 4 / 3" bc)	Assigns result of floating point math using external <i>bc</i> command
((VAL = 4 + 4))	Assigns result of expression to a variable and provides return code
if ((4+4=8)) ;then	Tests mathematical expression and provides return code

Calculations			
Operator	Description	Operator	Description
*	Multiplication	/	Division
+	Addition	-	Subtraction
%	Remainder (modulo)	**	Exponentiation

Mathematical Comparisons			
Operator	Description	Operator	Description
<	Less than	<=	Less than or equal to
>	Greater than	>=	Greater than or equal to
==	Equality	!=	Inequality

Bitwise Operations			
Operator	Description	Operator	Description
~	Bitwise negation	<<	Bitwise shifting left
>>	Bitwise shifting right	&	Bitwise AND
^	Bitwise Exclusive OR (XOR)		Bitwise OR

Miscellaneous			
Operator	Description	Operator	Description
id++	Post Increment	id--	Post Decrement
++id	Pre Increment	--id	Pre Decrement
=	Normal assignment	*=	Evaluate and assign
&&	Logical AND		Logical OR
!	Logical Negation	(<EXPR>)	subexpression (to force precedence)