Dice notation from <https://en.wikipedia.org/wiki/Dice_notation>

(**bold** = terminal symbol (**d**, **%**, **+**, **-**, **M**, **L**, **H**, **k**, **!**, **x**), *italic* = variable)

*C* = count – number of dice to roll

*S* = sides - either a number or s percent sign(%)

*M* = modifier

*N* = number of dice to remove/keep/add a second time

*P* = number of times to repeat a roll.

**d***S* - roll one *S*-sided die

*C***d***S* – roll an *S*-sided die *C* times and sum the results of the throws.

*C***d***S***+***M* – roll a *C***d***S*, then add *M* to the result

*C***d***S***-***M* – roll a *C***d***S*, then subtract *M* from the result

*C***d***S***-***N***L** – roll a *C***d***S*, then sum all but the *N* lowest valued dice. If *N* is missing, 1 is assumed.

*C***d***S***+***N***L** – roll a *C***d***S*, sum the result, then add then add the values of the *N* lowest dice a second time. If *N* is missing, 1 is assumed.

*C***d***S***-***N***H** – roll a *C***d***S*, then sum all but the *N* highest valued dice. If *N* is missing, 1 is assumed.

*C***d***S***+***N***H** – roll a *C***d***S*, then sum all but the *N* highest valued dice. If *N* is missing, 1 is assumed.

*C***d***S***k***N* – roll a *C***d***S*, keep the *N* highest valued dice and sum those. Equivalent to *C***d***S***-**(*C*-*N*)**L**

*C***d***S***k+***N* – equivalent to *C***d***S***k***N*

*C***d***S***k-***N* – roll a *C***d***S*, keep the *N* lowest valued dice and sum those. Equivalent to *C***d***S***-***N***L**

**!***C***d***S*– roll a *C***d***S*, sum the results. For any result equal to *S*, roll another *S*-side die and add those results to the total. If there are any results of *S* in the new roll, repeat. Keep repeating until no *S* results appear. For example !5d4 might result in the values 1, 3, 4, 4, 1. Note the sum of these values (13) and roll 2d4 for each of the 4s in the list. This second roll might result in 2, 4. The sum increases to 19 (13 + 6) and a d4 is rolled. Assuming its result is 3, the final sum is 22.

*C***d***S***x***P* – repeat a *C***d***S* roll *P* times. The result is a list of values.

Above can be added/subtracted/multiplied/divided in a sequence:

*C***d***S***+***M* **+** *C***d***S* **/** *C***d***S***+***M* **-** *C***d***S***-***M* **\*** *C***d***S***-L**

[**!**][*C*]**d**(*S*|**%**)[(**±**[*N*](**L**|**H**)|**k**[**±**]*N*)][[**±**]*M*][**x***P*]

[**!**][*C*]**d***S*[**±**[*N*](**L**|**H**)][[**±**]*M*][**x***P*]

Precedence ( (**!**( ( *C***d***S* ) **±***N***L**) ) **±***M* ) **x***P*

4d6-L

4d6k3