## BEDMAS

- Brackets • Exponents • Division • Multiplication $\quad$ Addition Subtraction

Brackets Operations within brackets should be done first if there is two sets of brackets, solve the inside brackets then the outside. Exponents refer to squared numbers and squared roots - A number that amplifies another number Ex: $3^{3}$ OR $\sqrt[3]{ }$

| Place Value |  |  |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| Tens | Ones. | Tenths | Hundredths | Thousandths | Ten Thousandths | Hundred Thousandths |


| Calculator keys |  |  |
| :--- | :--- | :--- |
| Squared $\mathrm{x}^{2}$ | Exponent | Negative ( - ) |
|  | $\mathrm{x}^{\mathrm{x}}$ | or ${ }^{+} /-$ |
| square Root | Root shift | Fractions - |
| $\sqrt{ } \square$ | $+\mathrm{x}^{\square}$ | $-/ \square$ |
| Brackets ( OR ) |  |  |

Buttons will vary depending on your calculator

## Squared Numbers and Square Roots

Squared Numbers - Multiplying a number by itself
Square Roots - Determining which number multiplied by itself equals the number under the square root sign.

## Fractions: Part of a whole.

Numerator is the top number
Multiplying Fractions multiply the numerators and then multiply the denominators, then simplify

| Probability |  |
| :--- | :--- |
| Certain $1: 1,100 \%$, | Likely $0 \%$ and $100 \%$ |
| $1,1 / 1$ chance |  |
| Unlikely 0 to 1 | Impossible $0: 1,0 \%$, <br> $0,0 / 1$ chance |

Formal probability rule:
All range between 0 and 1 (or $0 \%$ and $100 \%$ ) always

## Statistics

Statistics To help find patterns and relationships in data.

Data Information with context

Quantitative Variable Results in numbers with units where taking an average makes sense. Charts, graphs, plots spread = smallest value to biggest value

Categorial Variables Results in information placed into groups or categories. ( the count $\div$ the total * $100=$ the $\%$

## Integers

Integers- are whole numbers (not decimals) positive, negative, or zero Example: $4,-7$, 0

Integers on a number line The larger the number, positive or negative the further it is away from zero.
Absolute value of a number: is the distance away from zero. To represent the absolute value of a number, you write it like this $|5|$

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Integers (cont)
Adding
When you are adding Positive integers you
move right on the number line.
$3+4=7 \Rightarrow 3 \rightarrow \rightarrow \rightarrow \rightarrow 7$
When adding Negative numbers, you move
to the left on the number line*
$5+(-2)=3 \Rightarrow 3 \leftarrow 5$
Subtracting
Subtraction is opposite of addition. Subtract
a positive number count to the left. Subtract
a negative number and count to the right.
Multiplying \& Divinding
2 positive integers = A positive
2 negative integers = A positive.
2 integers with mixed signs = A negative.

## Proportions and Ratios

Ratio: A way to describe the relationship between two numbers. 2:1 OR 2 to 1

Proportions A way to describe the relationship between two numbers using a ratio or decimal.

Equivalent Ratios Look different but equal the same. 3:6=0.5 4/8 $=0.5$

## Scientific notation

## $230000000.00=2.3 \quad .000000012=1.2 x$

 $x 10^{8} \quad 10^{-8}$Scientific notation is a way of writing really big or really small numbers Using the base number 10. When doing a small number the exponent is negative

Denominator is how many there are as a whole. Numerator is how many there are FROM the denominator.

Denominator is the bottom

Dividing invert the second fraction and multiply.

Adding/Subtracting Fractions
If the denominator is the same, add or subtract the numerators.
If the denominator is different then find the least common multiple between the denominators and use that for the denominator. Multiply both numerator and denominator by the value needed to obtain the common denominator.
denominator.


## By Ktroch

cheatography.com/ktroch/

| Scientific notation |  |
| :--- | :--- |
| $230000000.00=2.3$ | $.000000012=1.2 \mathrm{x}$ |
| $\times 10^{8}$ | $10^{-8}$ |

Scientific notation is a way of writing really big or really small numbers Using the base number 10. When doing a small number the exponent is negative


Use this question to see if your calculator follows the order of operations.
$25-3 \times 6=$ ?
If the answer 7 , then it DOES follow the order of operations.
If the answer 132, then it does NOT.

## Decimals

Decimals are like fractions, they are part of a whole.

To turn a fraction into a decimal, divide the numerator by the denominator.

To turn a decimal in to a fraction, place the decimal over its place value and then simplify. (find the common denominator with factoring.)
Decimal Rounding : How many decimal points do you want to keep? Look at the number to the right of the value. If the number is less than 5 keep it and drop the rest to the right.
If the number is greater than or equal to 5 then add 1 to the number and drop the remaining to the right.


## By Ktroch

cheatography.com/ktroch/

| Algebra Terms |  |
| :---: | :---: |
| Letters are used to represent missing numbers in an equation. |  |
| Constants Are the numbers in the equation. |  |
| Variables Are the letters in the equation. |  |
| Coefficient A number that is directly followed by a variable. Grouped like this we are to multiply |  |
| Mean and Median |  |
| Mean <br> Mean = Average, Add all values and then divide by the number of values. $x$ or a $y$ with a bar over it. | $y=\sum y / n$ |
| Median <br> The center, equal amount of units on each side First sort smallest to biggest then use the formula, Odd Median=Middle value, in position. Even Median=Average of two middle numbers, average of values in position | Odd <br> ( $\mathrm{n}+1 / 2$ ) <br> Even <br> ( $\mathrm{n} / 2$ ) <br> and $(n / 2+1)$ |

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