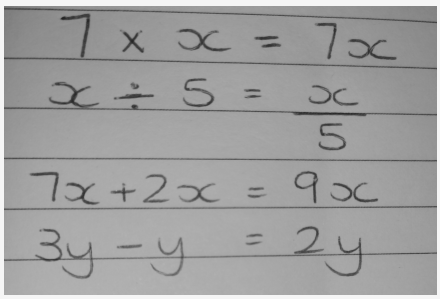
Algebra Vocabulary

Terms	A term is separated by a + or - sign E.g: 5x-3y+2 There are 3 terms in this equation: 5x, -3y and 2
Coeffi-cient	The number in front. E.g: In the term 5y, y's coefficient is 5
Constant	Constant is the single number which does not have any letters or numbers attached to it.
Like terms	Terms including *exactly* the same letter or combination of letters. E.g: 6p, 8p and 5p are like terms ab, 10ab and -2ab are like terms
Unlike terms	Terms which have different letters or combination of letters. E.g: 3x and 3y are unlike terms

Simplifying Expressions

Rule	Example
Any numbers in the expression are multiplied.	5 X 6x = 30x
Numbers are placed in front of letters when multip-lying.	x X 3y = 3xy
If there is more than one letter they are written in alphabetical order.	2q X 7p = 14pq
Numbers can be multiplied separately, then multiply letters.	6p X 3p = 6 X 3 X p X p $=18p^2$
Like terms can be grouped together and then added or subtracted. **Remember**, the + and - signs go with the terms on their *right*.	Simplify: 2x + y - x + 8y =(2x - x) + (y + 8y) = x + 9y

Examples - Simplifying



Powers Rules

p^4 means p multiplied by itself *four* times	p^4 = p X p X p X p
Simplify as powers and then multiply by each other	x X x X y X y $= x^2y^2$
When multiplying expressions with the **same base** (letter), we **add the powers**.	x^2 X x^5 $= x^{2+5}$ $=x^7$
When dividing expressions with the **same base**, we can **subtract the powers**.	$20x^4 \div 10x$ $= 20x^{4-1} \div 10$ $=2x^3$

Expanding

Multiply each term in the brackets by the outside term.
Then add together and simplify.

Examples:

8(c + d - e)	4x(2x - 5)
= 8 X c + 8 X d - 8 X e	=(4x X 2x) + (4x X -5)
=8c + 8d - 8e	$=8x^2$ - 20x

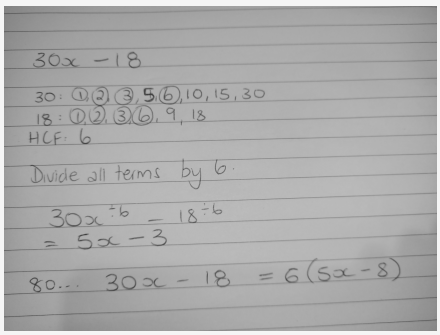
Factorising

1) Find the Highest Common Factor (number that divides in all terms equally) of all terms. Write this outside the brackets.

2) Divide each term by the HCF, putting result in the brackets.

Note: The HCF could be a number or a letter.

Factorising Example



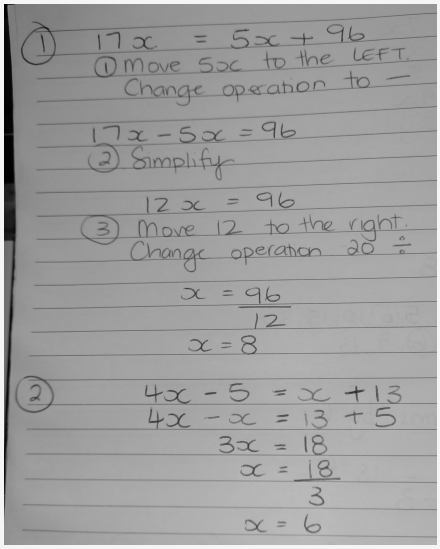
Solving Equations

The goal of solving an equation is to get the **letter term** on the **left** of the = sign and the **number/value** on the **right**.
Remember if a number or term is moved across the equals, then you must use the opposite operation.

9 Maths Exam Cheat Sheet

by ceyre via cheatography.com/128194/cs/25017/

Solving Examples



Converting Fractions, Decimals and Percentages

Percentages represent an amount out of 100	To convert, write the percentage as a fraction out of 100. E.g: 65% = 65/100 This can then be simplified by dividing both numbers by their HCF. 65/100 = 13/20 (HCF of 65 and 100 is 5)
Decimals ↔ Percentages	Decimal to Percentage: Divide % by 100 (or move decimal point to the left by two places) 65% = 65 ÷ 100 = 0.65 Percentage to Decimal: Multiply the decimal by 100 (or move decimal point to the right by two places) 0.74 = 0.74 * 100 = 74%
Fractions to decimals	Divide the numerator by the denominator: 2/3 = 2 ÷ 3 = 0.33333
Decimals to fractions	Take the decimal as an amount out of 10, 100, 100 etc depending on how many decimal places: 0.65 = 65/100 (2dp) 0.625 = 625/1000 (3dp) From here you may be able to simplify further using HCF

Calculating a Fraction or Percentage of an amount

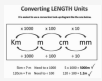
If calculating a fraction or percentage of an amount, multiply the amount by the fraction or percentage.

For example:

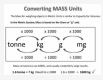
25% of $250 = $250 X 25% = $62.50

1/3 of 300 = 300 X 1/3 = 100

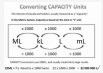
Measurement - Converting Length Units



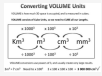
Measurement - Converting Mass/Weight Units



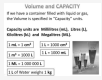
Measurement - Converting Capacity Units



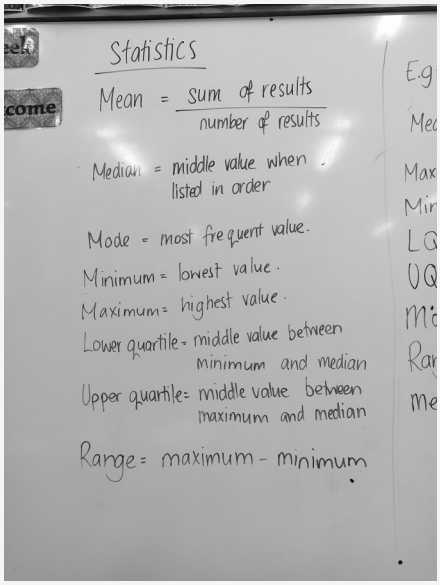
Measurement - Converting Volume Units



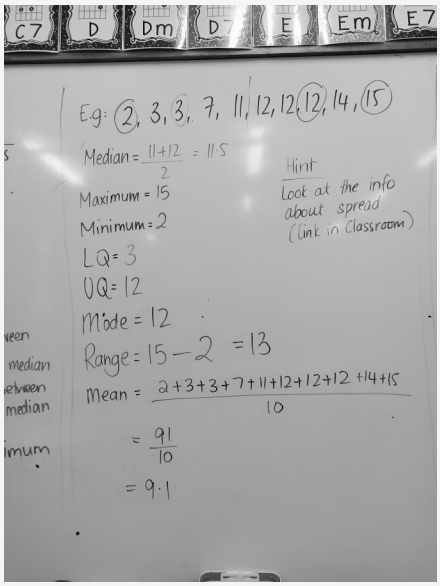
Measurement - Converting Volume and Capacity



Statistics - Calculations



Statistics - Example



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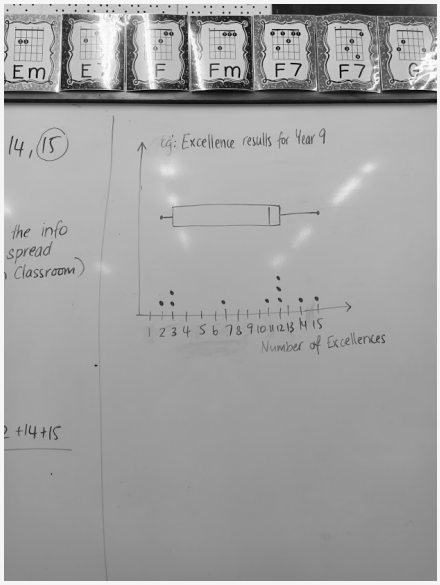
Statistics - Dot Plot/Box and Whisker



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