

MATHS KNOWLEDGE ORGANISER – YEAR 9 TERM 1

#	Topic	Information	Example	Hegarty clip
1	Standard Form	$A \times 10^b$ <i>where $1 \leq A < 10$, $b = \text{integer}$</i>	$8400 = 8.4 \times 10^3$ $0.00036 = 3.6 \times 10^{-4}$	121-128
2	Negative Powers	A negative power performs the reciprocal. $a^{-m} = \frac{1}{a^m}$	$3^{-2} = \frac{1}{3^2} = \frac{1}{9}$	102-111
3	Fractional Powers	The denominator of a fractional power acts as a 'root'. The numerator of a fractional power acts as a normal power. $a^{\frac{m}{n}} = (\sqrt[n]{a})^m$	$27^{\frac{2}{3}} = (\sqrt[3]{27})^2 = 3^2 = 9$ $\left(\frac{25}{16}\right)^{\frac{3}{2}} = \left(\frac{\sqrt{25}}{\sqrt{16}}\right)^3 = \left(\frac{5}{4}\right)^3 = \frac{125}{64}$	102-111
4	Powers	$p = p^1$ $p^0 = 1$	$99999^0 = 1$	
5	Geometric Sequence	A sequence of numbers where each term is found by multiplying the previous one by a number called the common ratio, r .	An example of a geometric sequence is: 2, 10, 50, 250 ... The common ratio is 5 Another example of a geometric sequence is: 81, -27, 9, -3, 1 ... The common ratio is $-\frac{1}{3}$	264
6	Error Interval	A range of values that a number could have taken before being rounded or truncated. An error interval is written using inequalities, with a lower bound and an upper bound .	0.6 has been rounded to 1 decimal place. The error interval is: $0.55 \leq x < 0.65$ The lower bound is 0.55 The upper bound is 0.65	774-777