

## MATHS KNOWLEDGE ORGANISER – YEAR 9 TERM 1

#	Topic	Information	Example	Hegarty clip
1	Standard Form	$A \times 10^b$  <i>where <math>1 \leq A &lt; 10</math>, <math>b = \text{integer}</math></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	Compound Interest	Interest paid on the <b>original amount and the accumulated interest</b>	A bank pays 5% compound interest a year. Bob invests £3000. How much will he have after 7 years.  $3000 \times 1.05^7 = \text{£}4221.30$	94
6	Error Interval	A <b>range of values</b> that a number could have taken before being rounded or truncated.  An error interval is written using inequalities, with a <b>lower bound</b> and an <b>upper bound</b> .	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

