## Scientific Notation

For numbers greater than 1		For numbers less than 1	
300000000.0		0.00000250	
3.000000000	Put decimal point to the right of the first non-zero number	0000002.50	Put decimal point to the right of the first non-zero number
8 places 3.000000000010 <sup>8</sup> 3.0x10 <sup>8</sup> This value is the speed of light in m/s!	Count the number of places the decimal point moved left, use number as exponent (×10 <sup>left places</sup> )  10 <sup>8</sup> This can now be expressed with two digits after removing extra zeros	6 places 0000002.5X10 <sup>-6</sup> 2.5x10 <sup>-6</sup> This is the average mass of an ant in kg!	Count the number of places the decimal moved right, use as exponent (x10 <sup>right</sup> places) note that it is a (-6) since initial number is less than one  Drop the extra zeros
Adding/Subtracting		Multiplying/Dividing	
4.215x10 <sup>-2</sup> + 3.2x10 <sup>-4</sup>		$(3.4x10^6)\times(4.2x10^3)$	
ĺ		$(3.4)\times(4.2) = 14.28$	Digit terms are
$ 4.215 \times 10^{-2} \\ + 0.032 \times 10^{-2} \\ 4.247 $	Convert all numbers to the same power of 10.  Add/subtract digits	$(3.4)\times(4.2) = 14.28$ $10^{(6+3)} = 10^9$	Digit terms are multiplied/divided in the normal way  Exponents are added for multiplication (subtracted for division)
$+0.032 \times 10^{-2}$	the same power of 10.		multiplied/divided in the normal way  Exponents are added for multiplication
$\frac{+0.032 \times 10^{-2}}{4.247}$	the same power of 10.  Add/subtract digits	$10^{(6+3)} = 10^9$ $14.28 \times 10^9$	multiplied/divided in the normal way  Exponents are added for multiplication (subtracted for division)  Combine digits and
$\frac{+\ 0.032 \times 10^{-2}}{4.247}$	the same power of 10.  Add/subtract digits  Put in scientific notation	$10^{(6+3)} = 10^9$	multiplied/divided in the normal way  Exponents are added for multiplication (subtracted for division)  Combine digits and exponent terms
$\frac{+0.032 \times 10^{-2}}{4.247}$	the same power of 10.  Add/subtract digits  Put in scientific notation  Using the	$10^{(6+3)} = 10^9$ $14.28 \times 10^9$ $1.428 \times 10^{10}$	multiplied/divided in the normal way  Exponents are added for multiplication (subtracted for division)  Combine digits and exponent terms
+ 0.032x10 <sup>-2</sup> 4.247  4.247x10 <sup>-2</sup> Punch the digit number in	the same power of 10.  Add/subtract digits  Put in scientific notation  Using the	$10^{(6+3)} = 10^{9}$ $14.28 \times 10^{9}$ $1.428 \times 10^{10}$ Calculator	multiplied/divided in the normal way  Exponents are added for multiplication (subtracted for division)  Combine digits and exponent terms