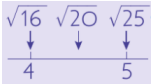


Core Knowledge																																														
An index or power	2^5	A small raised number. Plural of index is indices.																																												
Multiplying powers of the same number	$2^5 \times 2^3 = 2^8$	When multiplying by powers of the same number add the indices.																																												
Dividing powers of the same number	$5^5 \div 5^2 = 5^3$	When dividing by powers of the same number subtract the indices																																												
Nested brackets	$[10 - (5 - 2)]^2$ $10 - (5 - 2) = 10 - 3$ $= 7$ $7^2 = 49$	Some calculations have nested brackets. This is one set of brackets inside another set of brackets. Sometimes the outer brackets are square brackets to make them easier to see. Use priority of operations to work out calculations inside the outer brackets.																																												
Estimating square roots	 $\sqrt{20}$ lies between 4 and 5	Use a number line and your knowledge of square numbers to find two integers that lie either side of a square root.																																												
Overestimate/under estimate		An overestimate is an estimate that is greater than the accurate answer. An underestimate is an estimate that is less than the accurate answer.																																												
Prefix	<table border="1" data-bbox="432 1312 871 1574"> <thead> <tr> <th>Prefix</th> <th>Letter</th> <th>Power</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>tera</td> <td>T</td> <td>10^{12}</td> <td>1 000 000 000 000</td> </tr> <tr> <td>giga</td> <td>G</td> <td>10^9</td> <td>1 000 000 000</td> </tr> <tr> <td>mega</td> <td>M</td> <td>10^6</td> <td>1 000 000</td> </tr> <tr> <td>kilo</td> <td>k</td> <td>10^3</td> <td>1 000</td> </tr> <tr> <td>deci</td> <td>d</td> <td>10^{-1}</td> <td>0.1</td> </tr> <tr> <td>centi</td> <td>c</td> <td>10^{-2}</td> <td>0.01</td> </tr> <tr> <td>milli</td> <td>m</td> <td>10^{-3}</td> <td>0.001</td> </tr> <tr> <td>micro</td> <td>μ</td> <td>10^{-6}</td> <td>0.000 001</td> </tr> <tr> <td>nano</td> <td>n</td> <td>10^{-9}</td> <td>0.000 000 001</td> </tr> <tr> <td>pico</td> <td>p</td> <td>10^{-12}</td> <td>0.000 000 000 001</td> </tr> </tbody> </table>	Prefix	Letter	Power	Number	tera	T	10^{12}	1 000 000 000 000	giga	G	10^9	1 000 000 000	mega	M	10^6	1 000 000	kilo	k	10^3	1 000	deci	d	10^{-1}	0.1	centi	c	10^{-2}	0.01	milli	m	10^{-3}	0.001	micro	μ	10^{-6}	0.000 001	nano	n	10^{-9}	0.000 000 001	pico	p	10^{-12}	0.000 000 000 001	Some powers of 10 have a name called a prefix .
Prefix	Letter	Power	Number																																											
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Billion/trillion	A billion is a thousand million, or a 1 followed by 9 zeros. A trillion is a thousand billion, or a 1 followed by 12 zeros.																																													
Multiplying be a negative power of 10	For example, $3 \times 10^{-4} = 3 \times \frac{1}{10^4} = \frac{3}{10^4} = 3 \div 10\,000 = 0.0003$.	Multiplying by a negative power of 10 is the same as dividing by a positive power of 10.																																												
Standard form	9.3×10^5 7.52×10^{-4} Using algebra, standard form is $A \times 10^n$ where $1 \leq A < 10$ and n is an integer.	A positive number written in standard form is a number between 1 and 10 multiplied by 10 to a power.																																												

