Mathematical Computations in Scientific Notation
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Addition
In order to add two numbers expressed in scientific notation the exponents must be the same.
**For example:** To add $2.00 \times 10^5$ and $1.00 \times 10^4$ both numbers must have the same exponent, either $10^5$ or $10^4$. So convert $2.00 \times 10^5$ to $20.0 \times 10^4$. Now you can add $20.0 \times 10^4$ and $1.00 \times 10^4$ to give you $21.0 \times 10^4$. Finally convert your answer back to proper scientific notation - $2.10 \times 10^5$.

Subtraction
In order to subtract two numbers expressed in scientific notation the exponents must also be the same.
**For example:** To subtract $1.00 \times 10^4$ from $2.00 \times 10^5$ both numbers must have the same exponent, either $10^5$ or $10^4$. So convert $2.00 \times 10^5$ to $20.0 \times 10^4$. Now you can take $20.0 \times 10^4$ and subtract $1.00 \times 10^4$ to give you $19.0 \times 10^4$. Finally convert your answer back to proper scientific notation - $1.90 \times 10^5$.

Multiplication
In order to multiply two numbers expressed in scientific notation one first multiplies the two numbers and then adds the exponents on the two numbers.
**For example:** To multiply $2.00 \times 10^5$ by $1.0 \times 10^3$ multiply $2.00 \times 1.0$ which gives 2.0 (remember significant figures - answer has only as many significant figures as the number with the fewest significant figures - in this case 2.00 has three significant figures while 1.0 has two significant figures so the answer would have two significant figures). Next add the exponents of $10^5$ and $10^3$ which gives $10^8$. The final answer then is $2.0 \times 10^8$.

Division
In order to divide two numbers expressed in scientific notation one first divides the two numbers and then subtracts the exponents on the two numbers.
**For example:** To divide $2.00 \times 10^5$ by $1.0 \times 10^3$ divide $2.00$ by $1.0$ which gives 2.0. Next subtract the exponents of $10^5$ and $10^3$ which gives $10^2$. The final answer then is $2.0 \times 10^2$. 