Adding and Subtracting Numbers in Scientific Notation with the Same Power

Example 1 Adding and Subtracting Numbers in Scientific Notation with the Same Power (Very Large) A popular social networking site has the most members between the ages of 15 and 28. Within this age group, there are $5.11 \cdot 10^7$ student members and $9.55 \cdot 10^7$ nonstudent members. What is the total number of members in this age group?	Ask yourself…. What operation is the problem asking me to complete? What do I notice about the bases? Can I factor out the same base and exponent using parenthesis? Is my answer written in scientific notation? If not, then rewrite!!!!
Suppose you want to find how many more nonstudent members than student members. To answer this question, you can subtract.	What operation is the problem asking me to complete? What do I notice about the bases? Can I factor out the same base and exponent using parenthesis? Is my answer written in scientific notation? If not, then rewrite!!!!

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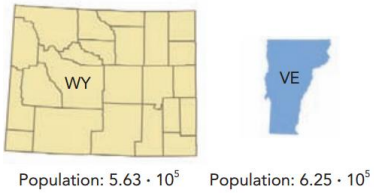
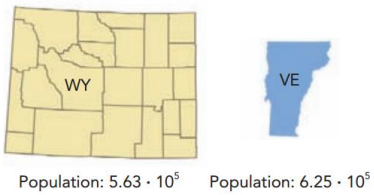
Example 2 As of the 2010 census, the population of Wyoming was approximately $5.63 \cdot 10^5$. The population of Vermont was approximately $6.25 \cdot 10^5$. **a)** Find the total population of the two states.  Population: $5.63 \cdot 10^5$ Population: $6.25 \cdot 10^5$	What operation is the problem asking me to complete? What do I notice about the bases? Can I factor out the same base and exponent using parenthesis? Is my answer written in scientific notation? If not, then rewrite!!!!
b) Find the difference in the population of the two states.  Population: $5.63 \cdot 10^5$ Population: $6.25 \cdot 10^5$	What operation is the problem asking me to complete? What do I notice about the bases? Can I factor out the same base and exponent using parenthesis? Is my answer written in scientific notation? If not, then rewrite!!!!

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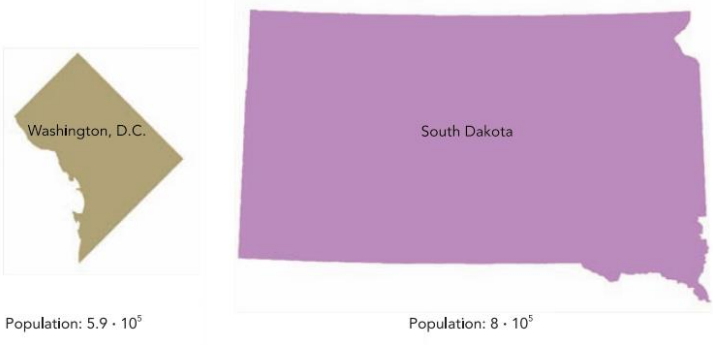
Your Turn **1** The population of Washington, D.C., is about $5.9 \cdot 10^5$. South Dakota has a population of approximately $8 \cdot 10^5$.  **a)** Find the sum of the populations.	What operation is the problem asking me to complete? What do I notice about the bases? Can I factor out the same base and exponent using parenthesis? Is my answer written in scientific notation? If not, then rewrite!!!!
b) Find the difference in the populations.	What operation is the problem asking me to complete? What do I notice about the bases? Can I factor out the same base and exponent using parenthesis? Is my answer written in scientific notation? If not, then rewrite!!!!