Phone Number Problem

Sample Phone Number : $\underbrace{123}_{x} - \underbrace{4567}_{y}$

How to do the steps below

- Wherever you see x, replace it with the first three digits of your phone number (excluding the area code). So Step 1 below would mean "Start with the first three digits of your phone number, and add 2. Press =."
- Similarly, when you see y, replace it with the last four digits of your phone number.
- So if your phone number were "123-4567" (like above), wherever you see x, you'd use "123," and wherever you see y, you'd use "4567."

Steps to get back your phone number

1. Start with x, and add 2. Press =.
2. Multiply the result by y. Press =.
3. Divide by x. Press =.
4. Subtract y. Press =.
5. Multiply by x. Press =.
6. Divide by 20,000. Press =. (Should look familiar.)
7. Add x. Press =.
8. Multiply by 10,000. Press =.

Abstraction Finally, I used x and y above instead of "the first three digits" and "the last four digits" when I wrote this because it hints at the idea of *abstraction*, which is probably the most important idea in math.

Specifically, math is great because it works *no matter what* the numbers represent and stand for. Math "abstracts" from specific things. So "2+2=4" holds whether you're adding up chickens, two dollar bills in a piggy bank, or planets a million miles away.

Now what I did above with x and y takes that exact same idea one step further. While arithmetic lets numbers stand for *any old things* (whatever those things may be), I used x and y to stand for *any old numbers* (whatever those numbers may be, or whatever your phone number may be).

It turns out, that's a really good thing to do! Remember that arithmetic and its rules let you add up chickens, money, and planets without having them right there in front of you. Well, having letters stand for numbers allows you to handle *any* number without having it right there in front of you. Using x and y, I could describe what to do with *any* phone number quickly, simply, and precisely without ever knowing what exactly that phone number is.

So if you understand that, Miss Ava, you'll understand and appreciate much more than I did when I was in your grade. Plus, you'll be well on your way to algebra and the kind of fun, interesting math that tells you how quickly gravity will push you down your bed's slide, how fast you'd have to drive from your house to beat Uncle Jimmy to the beach, or even how to make up your own crazier version of the steps I wrote above.