Magic chains

1. Ahmed asks Sophie to think of a 4-digit number and write it down but not to tell him. She writes 4562.

    Next he tells her to add 1000 to her number, subtract 100, add 10, subtract 1, add 100, subtract 10.

    He then asks her to write down her answer and show him (5561). He says straight away, "Your first number was 4562."
    How did Ahmed work this out so quickly?

2. Ask a friend to think of a 4-digit number. Ask them to add 1000, subtract 100, add 10, subtract 1, add 100 and subtract 10. Ask them to write down their answer. Can you tell them their starting number just as quickly as Ahmed did?

3. Make up your own magic chain so you have a quick way of finding the first number.

    Try it out on a friend!
    Are they impressed with your mental maths skills?

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4562
      +1000
5562
      -100
5462
      +10
5472
      -1
5471
      +100
5571
      -10
5561
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