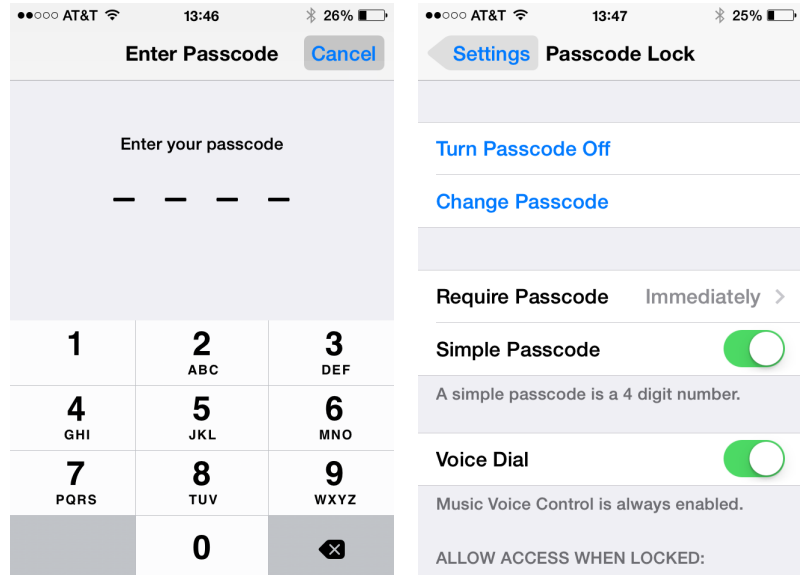


1ST DAY OF SCHOOL WARM-UP
★ = EXTRA CREDIT
DUE: MONDAY, 25 AUGUST 2014

There are 40 numbers (0 - 39) on a standard locker combination. Each combination is made up of 3 numbers _ - _ - _. For example, 22-30-23 or 35-18-19. There are 40^3 possible combinations. That is, $40 \cdot 40 \cdot 40 = 64,000$ combinations, if numbers may be repeated. If numbers may not be repeated, then there are $40 \cdot 39 \cdot 38 = 59,280$ combinations.

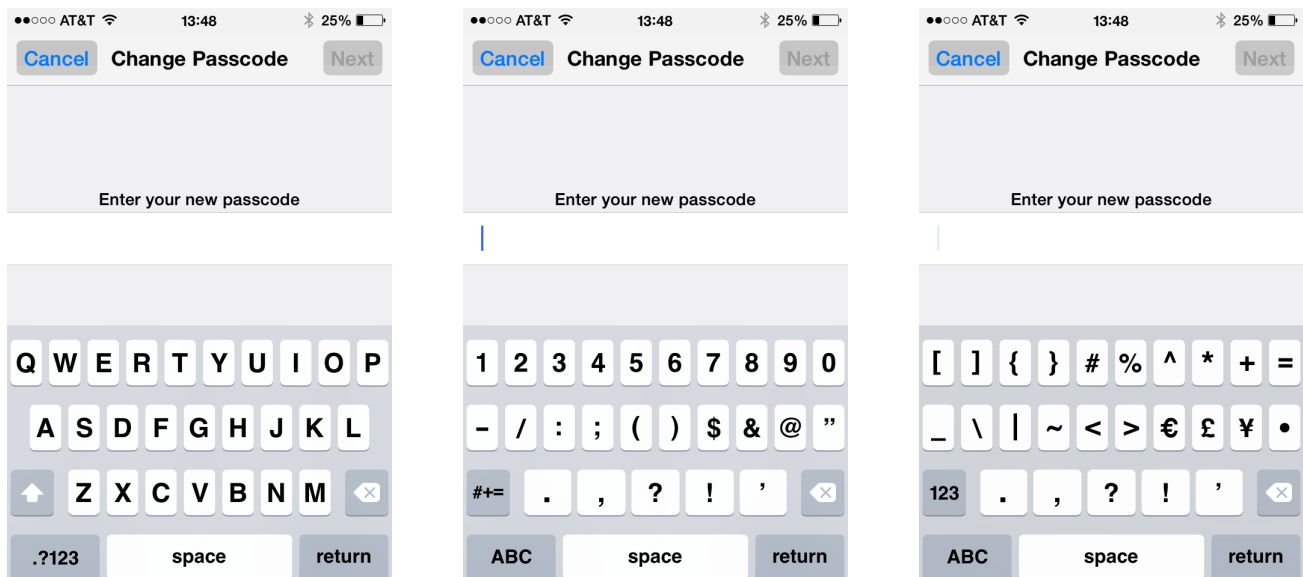
The iPhone allows the owner to choose a simple numeric passcode consisting of four numbers (0-9) in which the four digits may be repeated.

- ★ How many possible simple numeric passcodes for the iPhone are available?
 Make sure you show all your work. 😊



I read an article about iPhone tricks. One of the topics was about creating a complex passcode. The complex passcode may be an alpha/numeric/symbolic passcode 37 characters long (as opposed to a four-digit passcode)!

- ★ How many alpha/numeric/symbolic characters are available?



★ How many complex passcode combinations are possible, if characters may be repeated?

★ How many complex passcode combinations are possible, if characters may not be repeated?

Make sure you show all your work. 😊

Have confidence! Have fun! Don't give in to the google, bing, yahoo, etc. bug. 😊

ONE MORE PROBLEM!

★ One of my dear friends, Miss Geraldine, is an identical twin. She and her sister have two different birthdays, how is this possible?