Here are some questions that you can use to check your understanding of the slides.

1. Not related to phone networks: Does TCP/IP use in-band or out-of-band signaling for its control information (options, segment size,…)?
2. GSM-900 uses FDMA with, in total, 124 downlink and 124 uplink frequencies. In practice, why can a BTS not use all frequencies?
3. Why does GSM use logical channels that are mapped to physical channels? Could we not just use physical channels directly, for example we could define Physical Channel 1 = FCCH, Physical Channel 2 = AGCH, etc.?
4. To save resources, the base station does not allocate a dedicated channel for every phone in a cell, since most phones are idle most of the time (i.e. they don't do a phone call). But if a phone does not have a dedicated channel, how can it send a message to the base station to start a phone call?
5. (Not on the slides) Can you imagine a concrete situation where the mechanism used by GSM in question 4 fails to work correctly?
6. Imagine you are in LLN and you want to call your friend in Sydney (you and your friend have mobile phones). How is the connection established? In particular, how does the network find the destination? (we have not seen all the details in the course, but you should have a rough idea how it's done)
7. There is an important question that I have <u>not</u> addressed on the slides: How does a MS know the mapping of the logical channels to the physical channels? For dedicated channels like SDCCH and TCH, the answer is on the slides (where?). But how does a MS that enters a cell know what frequencies are used by the BTS of the cell and which timeslots are used for the broadcast and common channels? Try to find some possible solutions. (Be creative. Don't worry if you don't find the solution actually used by GSM.)
8. Something that we will see next week: The first GSM networks were only used for voice calls, but later GSM was extended to also allow Internet traffic. How would you transport Internet traffic over GSM (without modifying too much the existing infrastructure)? What problems could appear?