CS 372 Introduction to Computer Networks
Self-Check Exercises: Lecture 3b **Solutions**

1) Describe statistical multiplexing
   Statistical multiplexing is the adaptive sharing of the transmission medium in packet-switched networks, based on whether or not hosts have data to transmit (on-demand), preventing the medium from being wasted by hosts without any data to transmit.

2) Which are faster: Circuit-switched networks or Packet-switched networks?
   It depends! A circuit-switched network may be faster due to the packet header overhead of packet-switched networks. However, a packet-switched network may be faster due to its more adaptive use of the transmission medium. It's even more complicated than this…

3) What is the total utilization of a circuit-switched network, accommodating 10 users with equal bandwidth, with the following users:
   - Four users are utilizing 100% their bandwidth
   - Two users are utilizing 60% of their bandwidth
   - Four users are inactive

   4 * (1.00) * 0.10 + 2 * (0.60) * 0.10 + 4 * (0.00) * 0.10 = 0.52 = 52%

4) What are some of the effects of congestion in a packet-switched network.
   - Packet Delay
   - Packet Loss
   - Jitter
   - etc..