Problem 1 [15 pts]
Peterson and Davie, Chapter 4, Exercise 6

Problem 2 [20 pts]
a) Peterson and Davie, Chapter 4, Exercise 15 
b) Peterson and Davie, Chapter 4, Exercise 20

Problem 3 [10 pts]
Peterson and Davie, Chapter 4, Exercise 27

Problem 4 [10 pts]
Peterson and Davie, Chapter 4, Exercise 31

Problem 5 [15 pts]
a) Peterson and Davie, Chapter 4, Exercise 45 
b) Peterson and Davie, Chapter 4, Exercise 47

Problem 6 [10 pts]
a) How many IP addresses need to be leased from an ISP to support a DHCP server that uses NAT to service N clients, if every client uses at most P ports? 
b) If M unique clients request an IP address every day from the above mentioned DHCP server, what is the maximum lease time allowable to prevent new clients from being denied access assuming that requests are uniformly spaced throughout the day, and that the addressing scheme used supports a max of N clients?

Problem 7 [20 pts]
a) Run Dijkstra’s algorithm on the following network to determine the routing table for 3 
b) Repeat (a) using Bellman-Ford algorithm
Show your working for both parts for full credit.