Text Book:

1. 4.19 (b)(d)(f)

2. A museum has three rooms, each with a motion sensor (m0, m1, m2) that outputs 1 when motion is detected. At night, the only person in the museum is one security guard who walks from room to room. Create a circuit that sounds an alarm (by setting an output A to 1) if motion is ever detected in more than one room at a time (i.e., there must be an intruder). (a) Show your K-map, (b) Find all prime implicants, (c) Find all essential or secondary essential prime implicants, (d) Design the minimum sum circuit (use cover table if necessary).

   Repeat Question 2 above by changing 3 rooms to 10 rooms. Now, K-map will not work for you. How can you solve this problem? Since K-map cannot be used, you do not have to follow (a) to (d) steps above. Instead, try to solve this problem using the INVERSE of the alarm function.

3. 4.56 (textbook)

4. 6.43 (textbook)

5. 6.51 (textbook)

6. 6.52 (textbook)