Test 5

1. Find all of the prime implicants for the following function using either
   a. Quine-McCluskey or
   b. Iterated consensus

   $f(a, b, c) = \sum m\,(0, 3, 6, 7) + \sum d\,(1, 4)$

2. For the function

   $f(w, x, y, z) = \sum m\,(0, 5, 6, 7, 11, 12, 13) + \sum d\,(2, 4, 9, 10, 15)$

The prime implicants are

   w' z' w z w' x x y' x z w y z w x' y x' y z'

Find both minimum solutions.

3. For the following functions, find all of the terms that can be used in a minimum two-level AND/OR system using either
   a. Quine-McCluskey or
   b. Iterated consensus

   $f\,(w, x, y, z) = \sum m\,(1, 3, 4, 5, 10, 11, 12, 14\ 15)$
   $g\,(w, x, y, z) = \sum m\,(0, 1, 2, 8, 10, 11, 12,15)$

4. For the following set of functions

   $f\,(a, b, c, d) = \sum m\,(1, 2, 4, 5, 6, 9, 11, 13, 15)$
   $g\,(a, b, c, d) = \sum m\,(0, 2, 4, 8, 9, 11, 12, 13, 14, 15)$

we found the possible shared terms: a' b' c d', a' b c' d', a d
other prime implicants of f: c' d, a' c d', a' b c', a' b d'
other prime implicants of g: c' d', a b, a c', a' b' d

Find a set ofminimum sum of product solutions, corresponding to a two-level AND/OR system.