1. \( F(w,x,y,z) = \Sigma m(1,2,4,7,8,11,13,14)+\Sigma d(9,15) \)

(a)-(d)

(c) No. Each pair of adjacent 1s are covered by one same circle.

2. \( F(A,B,C,D) = \Pi M(1,3,4,5,6,7,9,12,13,14) \)

(a) and (b)

(c) Yes. Add redundant prime implicants to cover 0s not in one circle.
F(A,B,C,D) = (A+D')(B'+D)(C+D')(A+B')(C+B')