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Problem1

1. P(A,B,C,D,E,F) =P(A)P(B)P(C)P(D|A,B)P(E|C,D)P(F|D)

2. $3^0+3^0+3^2+3^0+3^2+3^1=1+1+9+1+9+3=24$

Reason: A,B,C are independent(have no parent), D,E have 2 parents, F has one parent

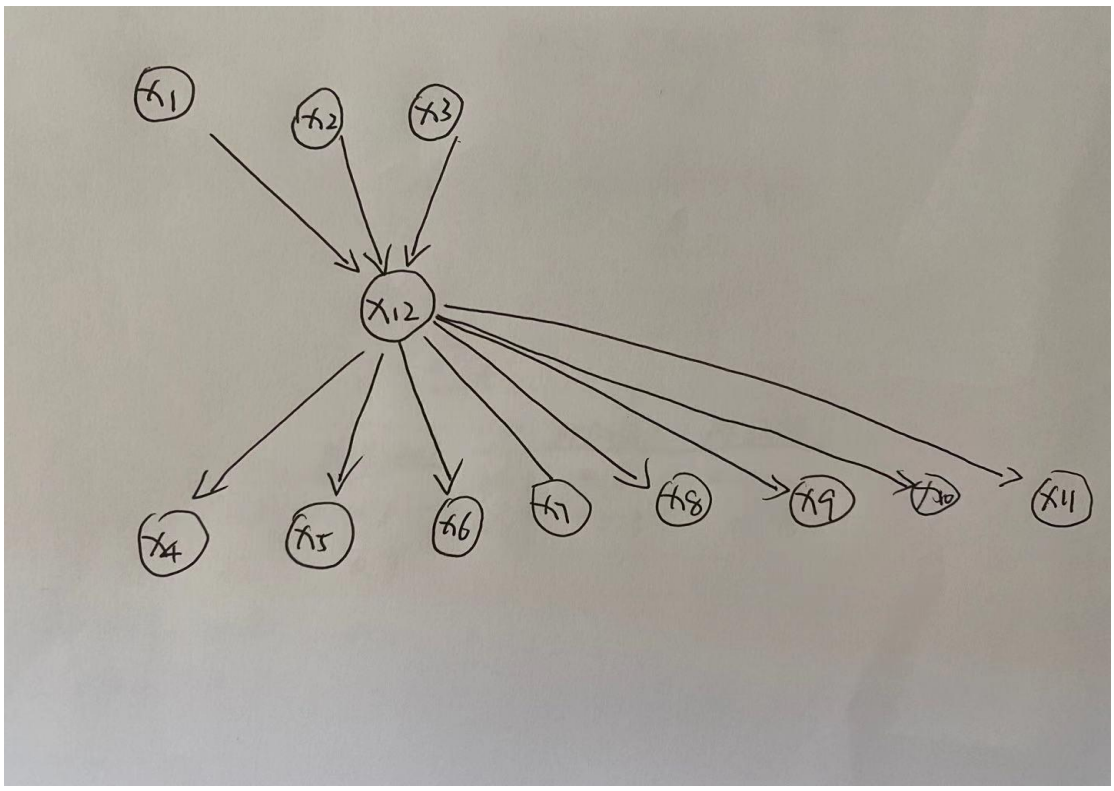
3. T
   F
   F
   F
   T Reason: P(D)P(E|D)P(F|D)

   P(E,F|D) = $\frac{P(D,E,F)}{P(D)}$ = P(E|D)P(F|D) which equals (E⊥⊥F) ⊥D

4. A) 0.4666
   B) 0.0030
   C) 0.1456
   D) 0.2850
   E) 0.0194

Problem2

1.



2. $2^0+2^0+2^0+2^1+2^1+2^1+2^1+2^1+2^1+2^1+2^3=1+1+1+2+2+2+2+2+2+2+2+8=27$
Reason: x1x2x3 are independent, x12 has 3 parents, x4-x11 have 1 parent for each.

3. 1
   0
   0
   1
   1
   1