Part A:

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2) Given a database of transactions and a min-support = 2
   a) An example of an association rule that matches min-suport = 2 and min-conf = 70.
      (I1, I2, I3, I4, IX -> IY)
      If IX = I6 and IY = I7,
         s = sup(I1, I2, I3, I4, I6, I7) = 2
         c = conf(X->Y) = sup(XY)/sup(X) = sup(I1, I2, I3, I4, I6, I7)/sup(I1, I2, I3, I4, I6)
           = 2/2 = 1.
      Therefore (I1, I2, I3, I4, I6 -> I7) is an acceptable rule.
   b) For the association rule I1− > I6, compute the support, confidence, lift, and conviction.
      sup(I1I6) = 2
      conf(I1I6) = sup(I1I6)/sup(I1) = 2/3
      lift(I1I6) = conf(I1I6)/rsup(I6) = (⅔)/(sup(I6)/5) = (⅔)/(⅗) = 2/5
      conviction(I1I6) = (1-rsup(I6)/(1-conf(xy)) = (1-⅗)/(1-⅔) = ⅖ / ⅓ = 6/5

3) Association Analysis II
   1st scan
      C_1 =

Itemset	sup
{M}	3
{O}	4
{N}	2
{K}	5
{E}	4
{Y}	3
{D)	1
{A}	1
{U}	1
{C}	2
{I}	1

L_1 =

Itemset	sup
{M}	3
{O}	4
{K}	5
{E}	4
{Y}	3

2nd scan

C_2 =

Itemset	sup
{M,O}	1
{M,Y}	2
{M, K}	3
{M, E}	2
{O,K}	3
{O,E}	3
{O,Y}	2
{K,E}	4
{K,Y}	3
{Y,E}	2

L_2 =

Itemset	sup
{M, K}	3
{O,K}	3
{O,E}	3
{K,E}	4
{K,Y}	3

3rd Scan

C_3 =

Itemset	sup
{O,K,E}	3

L_3 =

Itemset	sup
{O,K,E}	3