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Problem # 3
(a) by Tik = 2 x Xi - 69 Z
       log Z = 2x Xi - log Mik
       ext ( pd 5) = ext ( gk, xi - pd . lik)
          Z = exp (gk xi) / wik
                                         for K=1,2,...,K
        Fr Mik = 1
        Z = \sum_{k=1}^{K} exp \left( \lambda_k^T X_i \right)
 (b) log Tik = 2 x Xi - 69 Z
       exp (log Mik) = exp Ldx xi - log Z)
        M: K = exp (dx Xi) / 3
 (c) \log \left( \frac{\mathcal{A}_{i,k}}{\mathcal{A}_{i,l}} \right) = \beta_{i,k} \chi_{i,l}
        log (Mik) - log (Mil) = PKTXi , for k = 2, ..., k
        log Tik = BKT Xi + log Till, for k= 2, ..., k
        Mik = exp ( Bx xi ) = M:1 , for k= 21 ... , k
     ": Mik = exp ( dk xi) /Z from 3 b
     : . exp ( PK X; ) - 4: ( = exp ( &K X; ) / Z
         exp (BT xi) = exp (dx xi) / Z 41:1
         BKXi = DKTXi - LAP (Z. Mil)
          Bx = 2x - 69 (2. Till)
          β = 2 × - (log (Z) + log 7):1)
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A140 from previous: log Tik = 2x Xi - log Z c. for K= 1: log Mil = 2, Xi - log Z

Log Mil + Log Z = 21Xi

BK = 9K - 91 X!

:. BT = 2x - 2, Xi