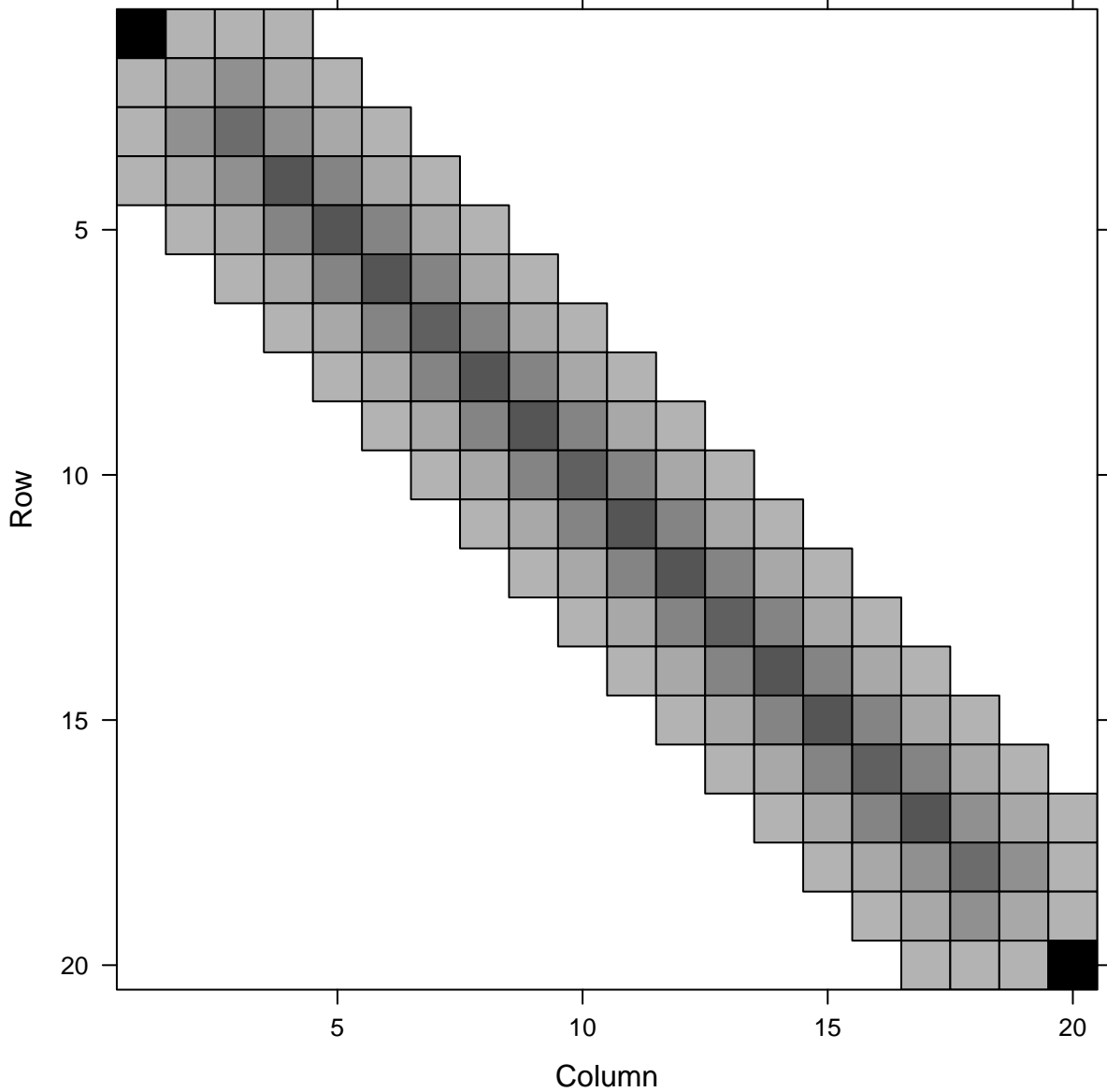
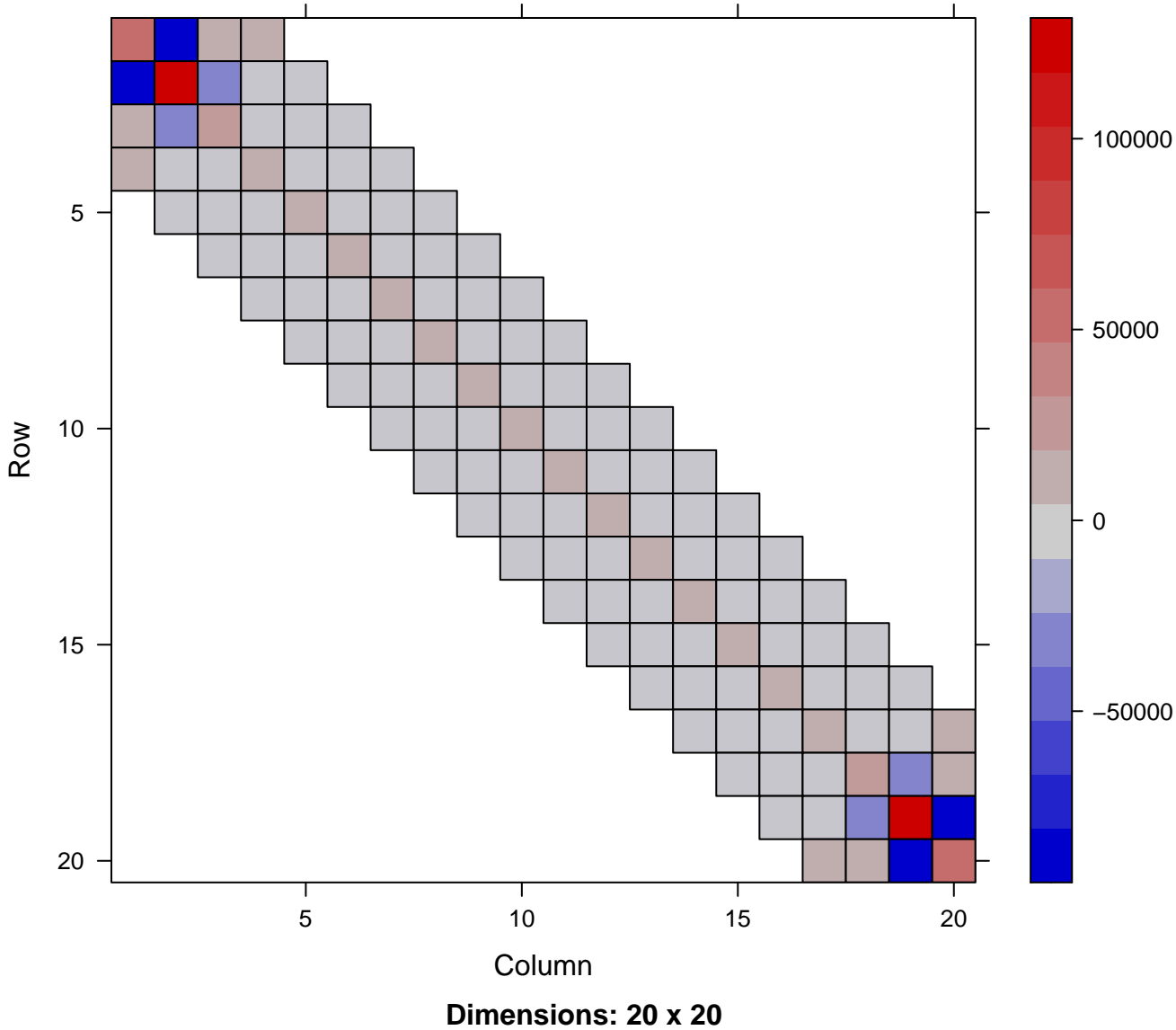


$$X'WX$$

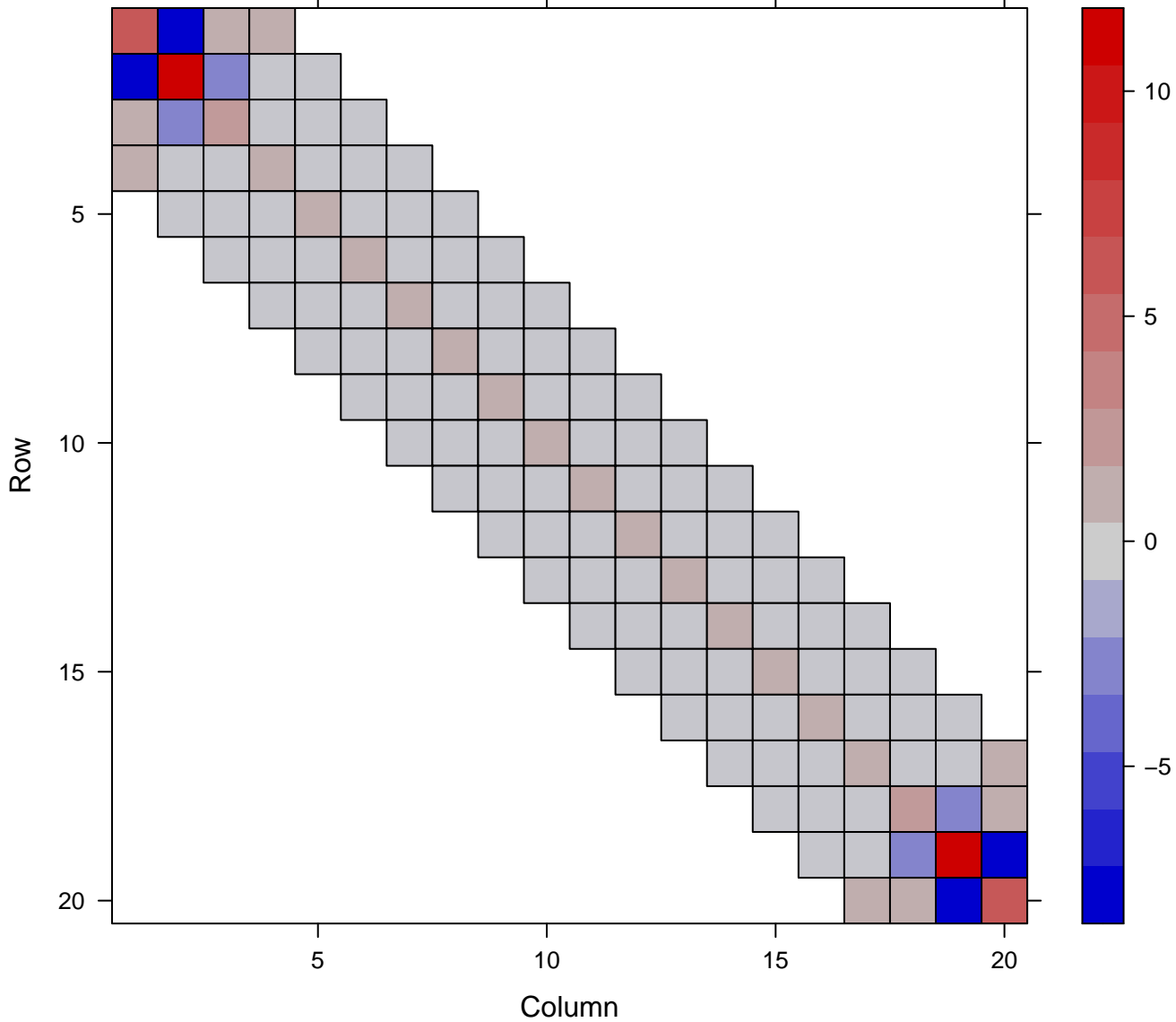


Dimensions: 20 x 20

$$\Sigma = \Omega, \text{ where } \Omega_{j,k} = \int B_j''(t) B_k''(t) dt$$

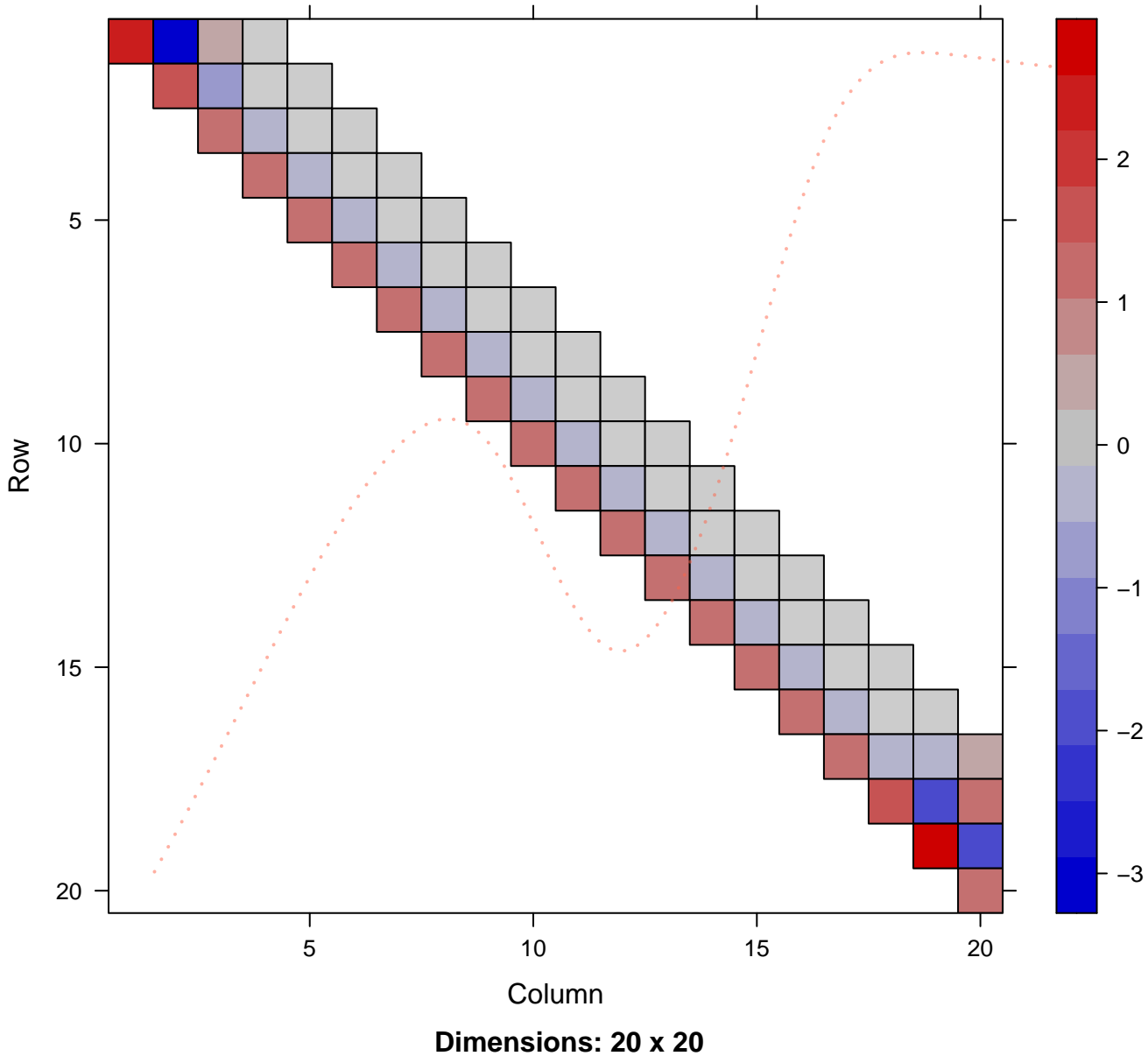


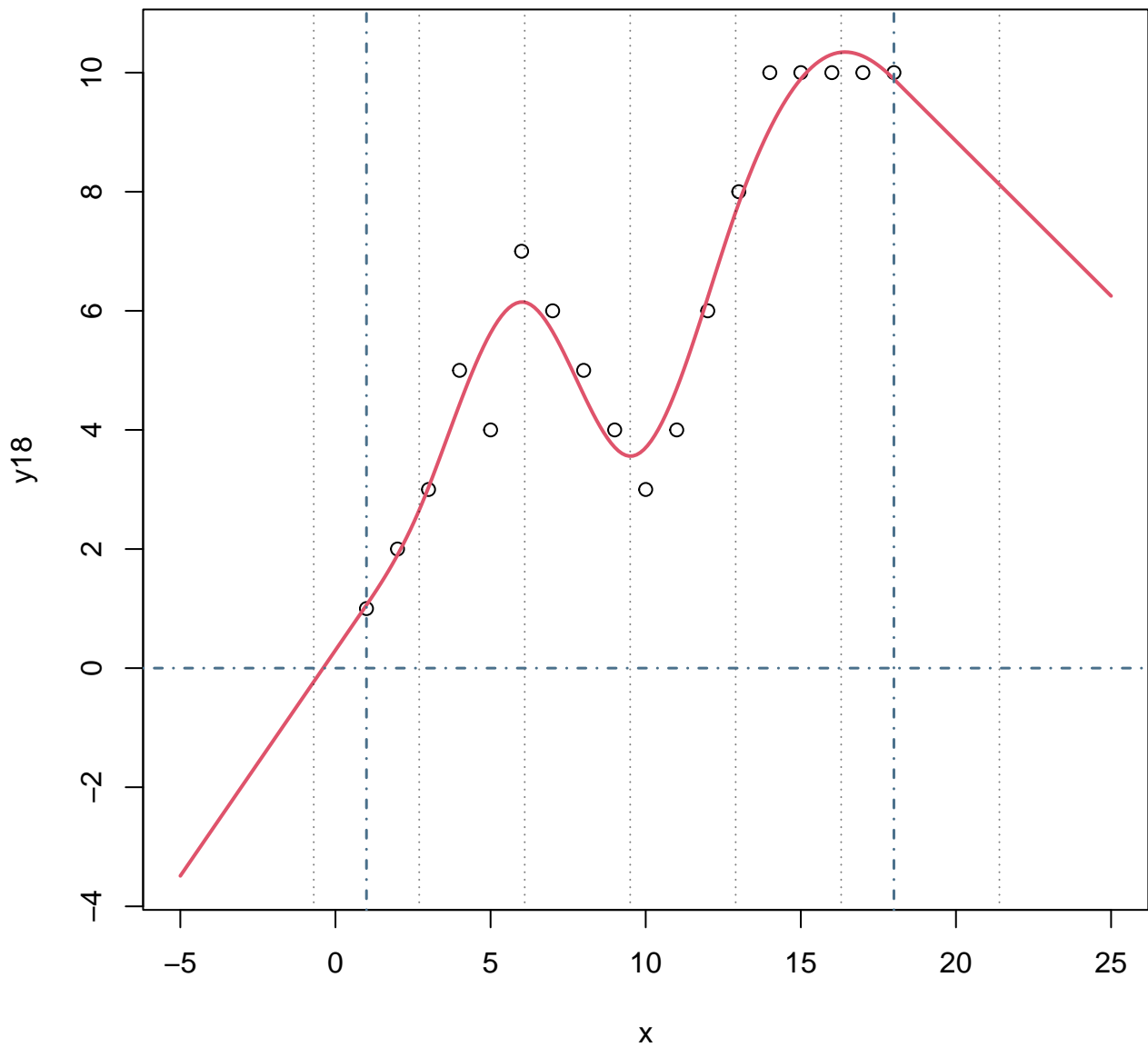
$$X'WX + \lambda \Sigma$$



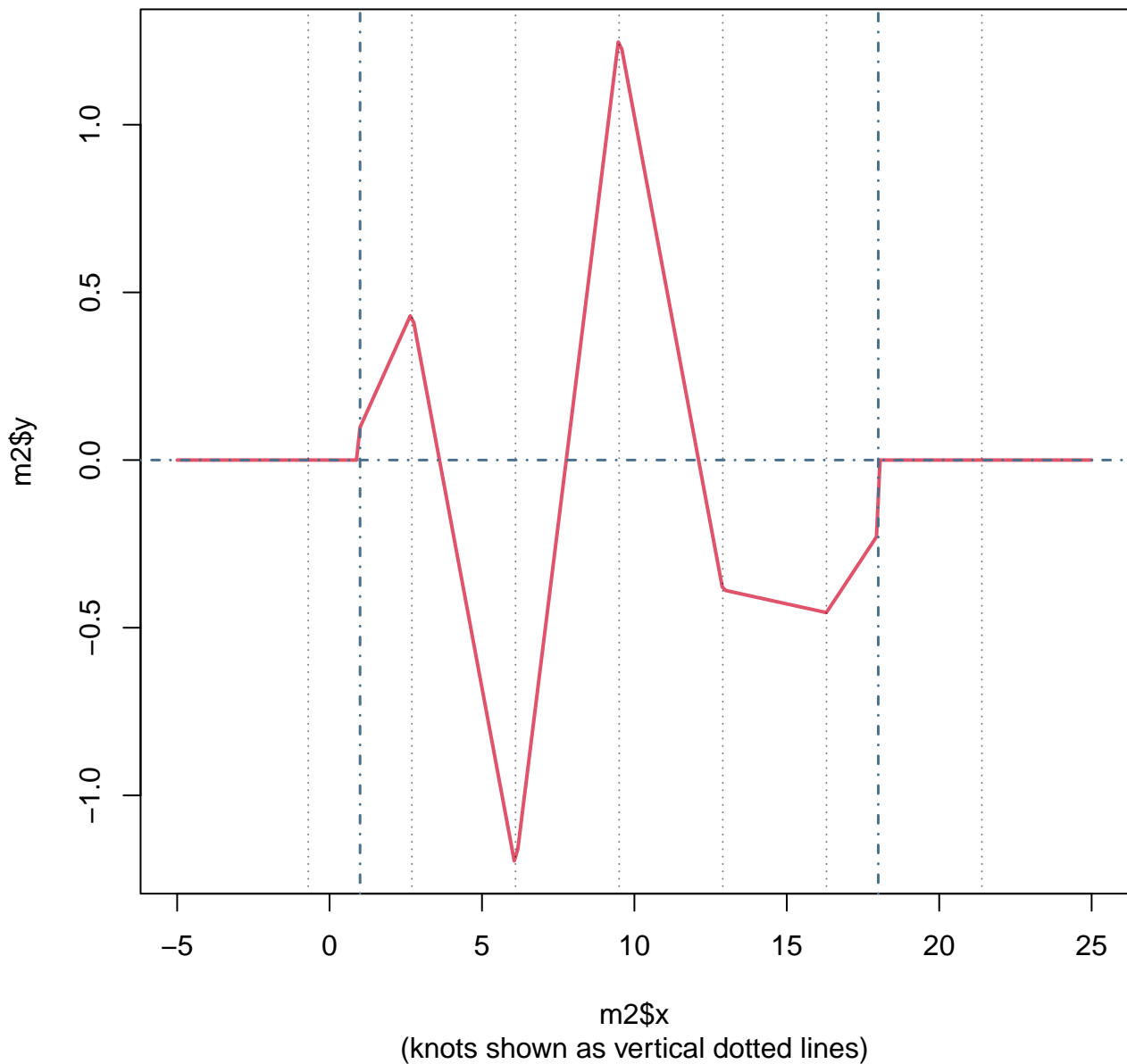
Dimensions: 20 x 20

$$R = \text{chol}(X'WX + \lambda \Sigma)$$





$m''(x)$ -- for $m(.) := \text{smooth.spl}(*, \text{all.knots}=c(..))$



$m'(x)$ -- for $m(.) := \text{smooth.spl}(*, \text{all.knots}=c(.))$

