1. Generate 200 data points from the model $Y = sin(x) + sin(x^2) + sin(x^3) + e$ where x is uniform on $(0, \pi)$ and $e \sim N(0, .25)$. Then fit the data using cubic B-splines following the example in the notes. Use leave one out cross validation to decide on how many knots to use and roughly where the knots should be placed.