Homework II - Bayesian Modelling

Yield of Potatoes

A researcher is investigating the relationship between yield of potatoes (y) and level of fertilizer (x). She divides a field into eight plots of equal size and applied fertilizer at a different level to each plot. The level of fertilizer and yield for each plot is recorded below:

Fertilizer level	Yield
1	25
1.5	31
2	27
2.5	28
3	36
3.5	35
4	NA
4.5	34

Suppose that we know that yield given the fertilizer level is $Normal(\beta_0 + \beta_1 x, \sigma)$.

a) Using non-informative priors for the parameters draw the posterior distribution for all of them.
b) Calculate a 95% credible interval for each parameter.
c) Calculate a 95% credible interval for y given $x = 4$.