Mu: normal distribution of mean\_mu and std\_mu

1. Mean\_mu\* = (n X theta/tau^2 + mean\_mu0/std\_mu0^2) / ( n / tau^2 + 1/std\_mu0^2 )
2. Std\_mu\* = (n/tau^2 + 1/std\_mu0^2)^-0.5

1/t^2 has gamma distribution with:

1. Shape = shape0 + n/2
2. Scale = (mean+0.5 \* SUM((theta\_s – mu)^2)) ^-1

Given (mu, tau, sigma, Y samples), THETA has normal distrubtion of mean\_theta and std\_theta:

1. Mean\_theta = (sum(y) / sigma^2 + mu/tau^2)/ (ns/sigma^2 + 1/tau^2)
2. Std\_theta = (ns/sigma^2 = 1/tau^2) ^-0.5

Given , is normally distributed with parameters:

Given , has a Gamma distribution of parameters

Given , each is normally distributed with parameters:

Completing these with the available information:

N = 11

N\_s = 30

Given , is normally distributed with parameters:

Given , has a Gamma distribution of parameters:

Given , each is normally distributed with parameters: