

575_Quiz1

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```
alpha <- 1
beta  <- 1

y <- c(3.0, 2.2, 1.5, 4.2, 2.7)

n <- length(y)

alpha_post <- alpha + n
beta_post  <- beta  + sum(y)

cat("Posterior shape  =", alpha_post, "\n")

## Posterior shape  = 6

cat("Posterior rate   =", beta_post,  "\n")

## Posterior rate   = 14.6

Nsim <- 1000

lambda_samp <- rgamma(Nsim, shape = alpha_post, rate = beta_post)
y_pred      <- rexp(Nsim, rate = lambda_samp)

plot(density(y_pred),
     main = "Posterior Predictive Distribution",
     xlab = "Simulated time until next flood")
```

Posterior Predictive Distribution

