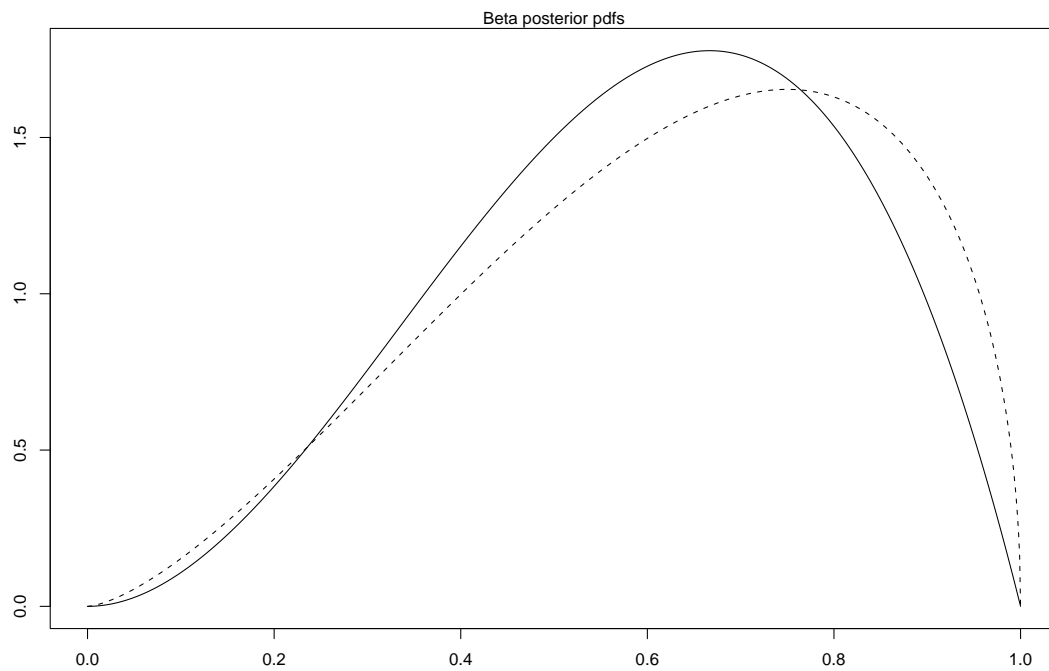
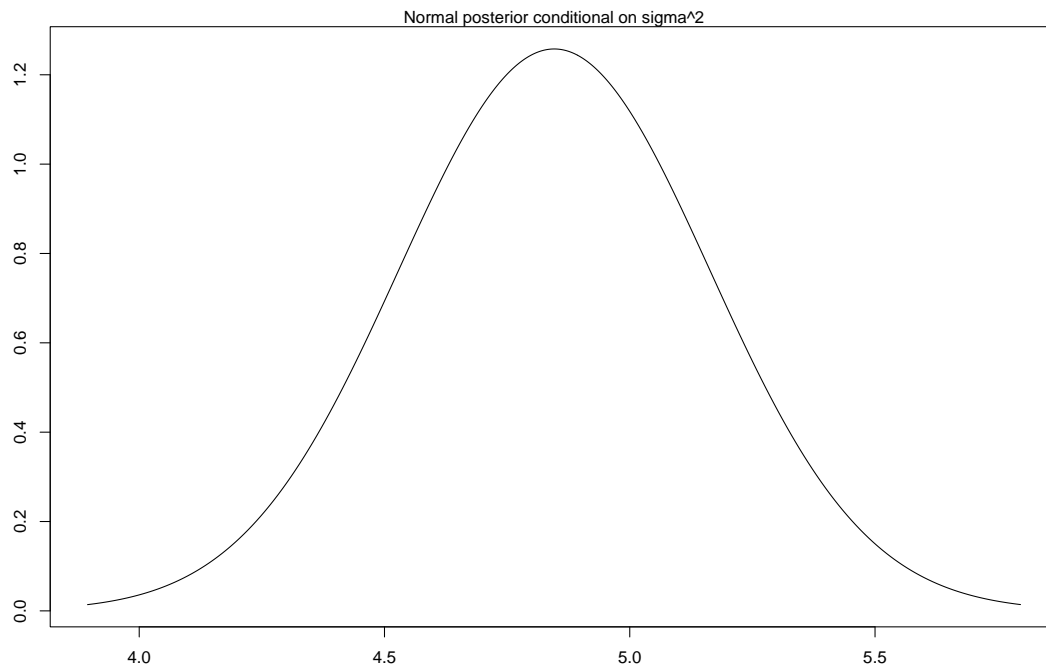


STA 590: Handout 1. Splus/R examples on Bayesian

```
# Beta example
x <- seq(0,1,.001)
y <- dbeta(x,3,2)
plot(x,y,type='l',xlab=" ",ylab=" ")
y <- dbeta(x,2.5,1.5)
lines(x,y,lty=2)
mtext("Beta posterior pdfs")
```



```
# UV index in LA example
x <- c(7,6,5,5,3,6,5,5,3,5,5,4,4)
n <- length(x)
xbar <- mean(x)
S <- sum((x-xbar)^2)
sigma <- var(x)
x <- seq(xbar-3*sqrt(sigma/n),xbar+3*sqrt(sigma/n),.001)
y <- dnorm(x,mean=xbar,sd=sqrt(sigma/n))
plot(x,y,type='l',xlab=" ",ylab=" ")
mtext("Normal posterior conditional on sigma^2")
```



```

invgamma <- function(x,a,b)
{
  dens <- (b^a/gamma(a))*(x^{-a+1})*(exp(-b/x))
  return(dens)
}
x <- seq(0.1, 15,.001)
a <- (n-1)/2
b <- S/2
y <- invgamma(x,a,b)
plot(x,y,type='l',xlab=" ",ylab=" ")
mtext("Inverse gamma posterior for sigma^2")

```

