Example 3.6: Power Function

```
tpower <- function(n1, n2, alpha,...){
        df <-  n1 + n2 -2
        tlim <- qt(1-alpha,df=df)
        prob <- function(theta){
            pt(tlim, df = df,
                ncp = theta * sqrt(n1 * n2/(n1+n2)),
                lower.tail=FALSE)}
        curve(prob, 0, 5, xlab=expression(theta==mu[1]-mu[2]), ...)
        abline(h=alpha, col="red")
        }
tpower(5, 5, 0.05, main="Power Function for Selected Sample Sizes")
tpower(10, 10, 0.05, add =TRUE, lty = 3)
tpower(100,100, 0.05, add =TRUE, lty = 4)
tpower(1000, 1000, 0.05, add =TRUE, lty = 5)
legend("bottomright",
    lty=c(1,3,4,5),
    legend=c("n1 = n2 =5", "n1 = n2 =10", "n1 = n2 =100","n1 = n2 =1000"),
    inset=0.1, bty="n")
```

Power Function for Selected Sample Sizes