

MATH 437 HW7

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```
library(MASS)
set.seed(437)
mu1=c(0,0,0,0,0,0,0,0,0,0,0,0,0,0,0)
mu2=c(3,3,3,3,3,3,3,3,3,3,3,3,3,3,3)
mu3=c(-3,-3,-3,-3,-3,-3,-3,-3,-3,-3,-3,-3,-3,-3,-3)
I=diag(14)
I4=4*I
X=mvrnorm(mu=mu1,Sigma=I4,n=16)
Y=mvrnorm(mu=mu2,Sigma=I4,n=8)
Z=mvrnorm(mu=mu3,Sigma=I4,n=8)
```

$$\hat{\beta} = (x^t x)^{-1} x$$
$$S = x^t \Sigma x$$
$$w_k = W_k(n, \Sigma)$$

```
plot(X)
points(Y,col="red")
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points(Z,col="blue")
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$$\mathbb{R}^{90}$$
$$0$$
$$\mathbb{R}^{10}$$
$$0$$
$$0$$
$$\frac{Q}{n-1}$$