

2 x 2 Linear Discriminant Function (Fisher's Method) with
 Confusion Matrix and Estimate of Apparent Error based on full
 Sample Information

ALT--P to Prin

Ex 10.2

Pi(1)	X(1)	X(2)	Crossprod
20.00	42.14	9.20	0.87 6.06
28.50	4.03	8.40	3.00 -3.48
21.60	23.93	10.80	0.44 -3.26
20.50	35.90	10.40	0.07 -1.60
29.00	6.29	11.80	2.78 4.18
36.70	104.21	9.60	0.28 -5.44
36.00	90.41	8.80	1.78 -12.68
27.60	1.23	11.20	1.14 1.18
23.00	12.19	10.00	0.02 0.47
31.00	20.33	10.40	0.07 1.20
17.00	90.09	11.00	0.75 -8.23
27.00	0.26	10.00	0.02 -0.07
Count	12.00		
Total	317.90	431.01	121.60 11.23 -21.67
Average	26.49	39.18	10.13 1.02 -1.97

$$\bar{X}(1) = \begin{matrix} 26.49 \\ 10.13 \end{matrix}$$

$$S(1) = \begin{matrix} 39.18 & -1.97 \\ -1.97 & 1.02 \end{matrix}$$

Population	n		Pi(2)	2	10	
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-		----	-	-	0.1250	----
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Pi(2)

	X(1)		X(2)	Crossprod	
	25.00	34.42	9.80	0.97	5.77
	17.60	2.35	10.40	2.51	-2.43
	21.60	6.08	8.60	0.05	-0.53
	14.40	22.40	10.20	1.91	-6.55
	28.00	78.62	8.80	0.00	-0.15
	16.40	7.47	8.80	0.00	0.05
	19.80	0.44	8.00	0.67	-0.54
	22.00	8.22	9.20	0.15	1.10
	15.80	11.11	8.20	0.38	2.06
	11.00	66.15	9.40	0.34	-4.74
	17.00	4.55	7.00	3.30	3.88
	21.00	3.48	7.40	2.01	-2.64
	229.60	245.31	105.80	12.28	-4.75
	19.13	22.30	8.82	1.12	-0.43

X-bar(2) =

19.13
8.82

S(2) =

22.30 -0.43
-0.43 1.12

$$S(\text{pooled})^{-1} = \begin{pmatrix} 0.0340 & 0.0382 \\ 0.0382 & 0.9790 \end{pmatrix}$$

$$\begin{pmatrix} 0.0382 \\ 0.9790 \end{pmatrix} \begin{pmatrix} x(1) \\ x(2) \end{pmatrix} = 0.3007x(1)$$

$$\begin{pmatrix} 0.0340 & 0.0382 \\ 0.0382 & 0.9790 \end{pmatrix} \begin{pmatrix} 45.63 \\ 18.95 \end{pmatrix} =$$

Pi(2)	Xo1	Xo2	Y(o)-hat	Pi(1)	Pi(2)
1	25.00	9.80	22.9069		
0	17.60	10.40	21.6240		
0	21.60	8.60	20.0001		
0	14.40	10.20	20.3477		
0	28.00	8.80	22.2386		
0	16.40	8.80	18.7506		
0	19.80	8.00	18.5166		
0	22.00	9.20	21.0626		
0	15.80	8.20	17.6279		
0	11.00	9.40	18.0691		
0	17.00	7.00	16.1043		
0	21.00	7.40	17.9352		
1					

Classification of Xo

Xo1 Xo2 Y(o)-hat Pi(1) Pi(2)

27.00

100.00

165.156

1

0

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1.5704x(2)

21.7388

Pi(1)	Pi(2)
1	0
0	1
0	1
0	1
1	0
0	1
0	1
0	1
0	1
0	1
0	1
0	1
0	1
2	10

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