

Judo

Person	Height	Weight	r women	r men
A	158	72	.98	.02
B	162	56	.95	.05
C	164	60		
D	175	72	.10	.90
E	180	78	.04	.95
F		84	.04	.98
	175			

Result b.

Part A: ~~2x2~~-Step

$$|\Sigma_{\text{women}}| = \begin{bmatrix} 9 & 0 \\ 0 & 16 \end{bmatrix}$$

$$M_{\text{women}} = \begin{bmatrix} 160 \\ 55 \end{bmatrix}$$

$$\Sigma^{-1} = \frac{1}{144} \begin{bmatrix} 16 & 0 \\ 0 & 9 \end{bmatrix}$$

$$(x - \mu)^T \Sigma^{-1} (x - \mu) = \frac{6^2}{9} + \frac{10^2}{16}$$

$$|\Sigma_{\text{women}}| = \begin{bmatrix} 9 & 0 \\ 0 & 16 \end{bmatrix} = 144$$

$$= 5.5625$$

$$\sqrt{144} = 12$$

$$2(3.14159)^{1/2} \times 12 = 75.39$$

$$N(A | \nu_{\text{women}}, \Sigma_{\text{women}}) = \frac{1}{75.39} \exp\left(-\frac{1}{2} \times 5.5625\right) =$$

$$= 8.2187 \times 10^{-9}$$

$$|\Sigma_{\text{men}}| = \begin{bmatrix} 16 & 0 \\ 0 & 25 \end{bmatrix} = 400$$

$$\Sigma^{-1} = \frac{1}{400} \begin{bmatrix} 16 & 0 \\ 0 & 25 \end{bmatrix}$$

$$\sqrt{400} = 20$$

$$(x - \mu)^T \Sigma^{-1} (x - \mu) = \frac{-14^2}{16} + \frac{10^2}{25}$$

$$2(3.14159)^{1/2} \times 20 = 125.66$$

$$= 425.29$$

$$N(A | \nu_{\text{men}}, \Sigma_{\text{men}}) = \frac{1}{125.66} \exp\left(-\frac{1}{2} \times 425.29\right)$$

$$= 2.470 \times 10^{-8}$$

(6 inputs) Residualities

$$\nu_{\text{women}} =$$