

MAI0142

Hand in Problems – 9

1. Fit a *BRM* to the data in Table 1. Observe that there are two groups of individuals and four repeated measurements. Analyse the residuals and decide if there are any extreme observations. Motivate the answer.

Table 1: Four repeated growth measurements were taken at ages $t_1 = 8$, $t_2 = 10$, $t_3 = 12$, and $t_4 = 14$ from 11 girls and 16 boys (Potthoff & Roy, 1964).

Id	Gender	t_1	t_2	t_3	t_4	Id	Gender	t_1	t_2	t_3	t_4
1	F	21.0	20.0	21.5	23.0	12	M	26.0	25.0	29.0	31.0
2	F	21.0	21.5	24.0	25.5	13	M	21.5	22.5	23.0	26.5
3	F	20.5	24.0	24.5	26.0	14	M	23.0	22.5	24.0	27.5
4	F	23.5	24.5	25.0	26.5	15	M	25.5	27.5	26.5	27.0
5	F	21.5	23.0	22.5	23.5	16	M	20.0	23.5	22.5	26.0
6	F	20.0	21.0	21.0	22.5	17	M	24.5	25.5	27.0	28.5
7	F	21.5	22.5	23.0	25.0	18	M	22.0	22.0	24.5	26.5
8	F	23.0	23.0	23.5	24.0	19	M	24.0	21.5	24.5	25.5
9	F	20.0	21.0	22.0	21.5	20	M	23.0	20.5	31.0	26.0
10	F	16.5	19.0	19.0	19.5	21	M	27.5	28.0	31.0	31.5
11	F	24.5	25.0	28.0	28.0	22	M	23.0	23.0	23.5	25.0
						23	M	21.5	23.5	24.0	28.0
						24	M	17.0	24.5	26.0	29.5
						25	M	22.5	25.5	25.5	26.0
						26	M	23.0	24.5	26.0	30.0
						27	M	22.0	21.5	23.5	25.0