

MAI0142

Hand in Problems – 10

1. In the Potthoff & Roy (1964) data set presented in table below, remove the outlying individuals and perform significance tests to answer the following questions
 - (i) Do the observations follow a linear growth model?
 - (ii) Do the boys and the girls follow the same growth model?

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