

Q1. The response time in milliseconds was determined for three different types of circuits that could be used in an automatic valve shutoff mechanism. The results from a completely randomized experiment are shown in the following table:

Circuit Type		Response Time			
1	9	12	10	8	15
2	20	21	23	20	30
3	6	15	8	16	7

- (a) Test the hypothesis that the three circuit types have the same response time. Use $\alpha = 0.01$.
- (b) Use Tukey's test to compare pairs of treatment means. Use $\alpha = 0.01$.
- (e) If you were the design engineer and you wished to minimize the response time, which circuit type would you select?
- (f) Analyze the residuals from this experiment. Are the basic analysis of variance assumptions satisfied?