

14.1: In an experiment conducted to determine which of 3 different missile systems is preferable, the propellant burning rate for 24 static firings was measured. Four different propellant types were used. The experiment yielded duplicate observations of burning rates at each combination of the treatments.

The data, after coding, are given in Table 14.3. Test the following hypotheses: (a) H'_0 : there is no difference in the mean propellant burning rates when different missile systems are used, (b) H''_0 : there is no difference in the mean propellant burning rates of the 4 propellant types, (c) H'''_0 : there is no interaction between the different missile systems and the different propellant types.

Table 14.3: Propellant Burning Rates

Missile System	Propellant Type			
	b_1	b_2	b_3	b_4
a_1	34.0	30.1	29.8	29.0
	32.7	32.8	26.7	28.9
a_2	32.0	30.2	28.7	27.6
	33.2	29.8	28.1	27.8
a_3	28.4	27.3	29.7	28.8
	29.3	28.9	27.3	29.1