**Exam results**

An analysis is carried out on the final exam **mark** attained by first year, college students in a statistics examination. Information is collected on each student includes their intelligence quotient (**iq**), the number of **points** they attained on their leaving certificate, their **school** or discipline (computing, science engineering), their **sex** and the **midterm** mark they obtained in an assessment in the same module. Students are randomly assigned to one of four lecture **group**s, which are taught by different lecturers.

1. Is there reason to doubt that the allocation of students of different disciplines to groups is random?
2. Is final exam mark independent of IQ?
3. Is the male-female ratio the same for all three disciplines?
4. On average, do students improve in the final exam compared to the mid-term exam?
5. Do leaving certificate points give any indication of performance in the final exam?
6. Is there evidence that performance in the final exam varies by lecture group?
7. Do all disciplines perform about equally well in the final exam?
8. Do females out-perform males in the final exam?