Case: Building sheets

Background

During the manufacture of sheets of building material, the permeability was determined for three sheets from each of three machines on each day.

Variables

variable name	description
`day`	Day on which the sheet was produced
`machine`	Machine which produced the sheet
`log.permeability`	logarithm of the permeability (in seconds) of sheet

- Test for interaction effects between `machine` and `day`.
- Estimate the mean squared error (MSE) when predicting the log-permeablility of a new (unobserved) sheet.
- Estimate the mean squared error (MSE) when predicting the log-permeablility of a new sheet produced by a new (unobserved) machine.
- Estimate the mean squared error (MSE) when predicting the log-permeablility of a new sheet produced on a new (unobserved) day.
- Estimate the mean squared error (MSE) when predicting the log-permeablility of a new sheet produced by a new machine on a new day.
- Discuss which of these measures that would be relevant if you were the manager of the sheet factory.