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Figure 1.1 The rules for interpreting NMR spectra depend only on the nuclear spins present. Consider the ^1H NMR spectrum (top) of the ethyl group in $\text{CH}_3\text{CH}_2\text{OH}$ and the ^{19}F NMR spectrum of the perfluoroethyl group in $\text{CH}_3\text{CF}_2\text{OCCl}_3$ (bottom). Both ^1H and ^{19}F are spin- $\frac{1}{2}$ nuclei. In both compounds there is a group of three spins on one carbon and a group of two on the adjacent C . The spectra show the same coupling patterns because the same sorts of groups of spins are present, a group of three spin- $\frac{1}{2}$ and a neighbouring group of two spin- $\frac{1}{2}$. The coupling constants and chemical shifts differ. Source: (data taken from C. J. Schick and K. G. Coxon (1979), *Inorg. Chem.* 18, 2615). Note the 'normalization' use of upfield shifts positive has been changed to the more usual downfield shifts positive in the figure.