Summary in English

Khadija Laghrida Christensen and Ole Christensen, *Linear independence in function spaces.* (Danish.) This article considers vector spaces generated by some special functions, and examines whether their linear combinations have unique representations. The authors start with the most elementary cases, namely, polynomials and trigonometric functions. Next they consider complex exponential functions and some more complicated systems of functions which have recently attracted much attention in pure mathematics as well as in applied science. Finally, some open problems related to those systems are presented. These are easy to formulate, but apparently very difficult to solve.

Kent Holing, *When does the quartic equation have constructible roots?* (Norwegian.) This article provides a simple criterion for counting the number of constructible roots of a quartic equation with rational coefficients. The answer is given in terms of the number of rational roots of the resolvent equation. After some examples and exercises, the article ends by connecting this result to the computation of Galois groups of quartic polynomials.

Gert Almkvist, *Strings in moonshine I.* (Swedish.) The author considers various special power series and Lambert series with integer coefficients, that arise from linear differential equations. Some of these curious series also turn up in algebraic geometry and representation theory, where their coefficients count the number of lines on particular algebraic varieties or the dimensions of the representations of particular groups. Here the topic is approached from the point of view of differential equations. The constraint of integer coefficients turns out to be very tight. For one important class of equations of the fourth order, only fourteen such cases are known. The author presents one of these cases, which possesses an unexpected link to algebraic geometry.