Summary in English

Vagn Lundsgaard Hansen, *Around infinity* (Danish.) The author discusses the notion of infinity in the historical and philosophical context in which it developed from Greek roots, such as Zeno's Paradoxes, to its mathematical clarification in the work of Cantor shortly before 1900. There is a lucid treatment of the resolution of Zeno's Paradoxes by means of infinite series. A discussion of the real number system based on descending chains of intervals leads to a proof of uncountability different from the usual diagonal arguments. The article ends with a little cardinal arithmetic illustrated by Hilbert's Hotel.

Bengt Ulin, *Even this many examples do not suffice...* (Swedish.) The author discusses a divisibility question that links the binary and decimal representations of integers. A binary string can be read in both the binary and decimal systems, and then it represents two distinct integers. The string 11 represents the integer three in the binary system and the integer eleven in the decimal system. Now suppose an integer has a decimal expansion with all digits equal to 0 or 1, and suppose the integer is divisible by eleven. Will the integer obtained by reading the same decimal expansion in the binary system be divisible by three? The integer $1111 = 101 \cdot 11$ is divisible by eleven, and the same string of digits represents the integer 15 in the binary system. And 15 is divisible by three. Trying other small and not so small examples, the rule always holds. But ultimately, very ultimately, it fails! The author shows that this divisibility rule holds for the first 237 590 integers divisible by eleven and having only 0 and 1 in their decimal expansions, but it fails for 10101010101010101010.

Maria Deijfen, *Epidemics on social graphs* (Swedish.) In most mathematical models for the spread of epidemics, the population in which the epidemic takes place is assumed to be homogeneously mixing, that is, no social structure is assumed to exist in the population. In this work it is described how this very unrealistic assumption can be relaxed in the Reed–Frost model, which is one of the simplest stochastic models for epidemics. The social structure is modelled by various types of random graphs: Bernoulli graphs, Markov graphs and small-world networks. For each of these structures it is investigated if it can be regarded as a good model for a social network. Also, the effects on the spread of the epidemic are quantified in that asymptotic formulas for epidemiological quantities like the basic reproduction number and the final size of the epidemic are derived.