

## Summary in English

**Ivar Farup**, *The Piling of Books* (Norwegian).

Given an inexhaustible supply of books. Is it possible to pile them up on a table such that they extend arbitrarily far from the edge of the table? In the article this is shown to be the case through a simple construction which ought to be well-known.

**Ragnar Solvang**, *Leibniz triangle* (Norwegian).

Pascals triangle is well-known. In this article another triangular exhibition of numbers, this one with fractional entries and introduced by Leibniz will be studied. In particular the sums of rows and columns will be computed.

**Ulf Persson**, *The Mercator projection* (Swedish).

The Mercator projection is usually presented severely truncated in atlases, for obvious reasons as the earth is mapped onto an infinite strip. Surprisingly though a fairly modest truncation accomodates all of the earth except two coin-sized regions at the poles. In fact such a truncated map will be presented

with the upper and lower extremes of the rectangle are scaled 1:1.

**Jorge Nuno Silva**, *Mathematics and Games:Hex*.

The well-known game of hex is being studied. This is a game in which draws are not possible. It is shown that this property is actually equivalent to Brouwers celebrated fixpoint theorem.

**Anders Thorup**, *The Josefus permutation* (Danish)

It is well-known that any permutation can be presented as a composition of cycles. In fact every permutation has a unique representation, up to order, as a product of disjoint (and hence commuting) cycles. It turns out that the composition  $c_n c_{n-1} \dots c_2$  where  $c_k = (1 \ 2 \ 3 \ \dots \ k)$  has a nice and easily found such representation, but surprisingly if the order of the cycles is reversed the problem becomes almost intractable. The elementary nature of the problem gives a good exposure to students, and it has in fact been studied by students over the years. The article is in the nature of a progress report, and the cases of  $n = 2^m, 2^m - 1$  are treated in detail. Surprising connections to other parts of combinatorics are highlighted.

**Kent Holing**, *Pythagoreiske tripler* (Norwegian)

Some generalizations of previous problems are discussed in the context of pythagorean triplets.