1047-14-60 **Murray A. Marshall*** (marshall@math.usask.ca), 106 Wiggins Road, Saskatoon, SK S7N5E6, Canada. *Polynomials non-negative on the strip.*

Any real polynomial $f(x, y)$ which is non-negative on the strip $[0, 1] \times \mathbb{R}$ is expressible as $f(x, y) = \sigma(x, y) + \tau(x, y)x(1-x)$ where $\sigma(x, y), \tau(x, y)$ are real polynomials which are sums of squares of real polynomials. There are various equivalent formulations of the result. The proof will appear in the Proceedings of the AMS. See the author's webpage for the pdf file. This provides an affirmative answer to the so-called Strip Conjecture. In terms of preorderings the result asserts that the preordering of the polynomial ring $\mathbb{R}[x, y]$ generated by $x(1 - x)$ (or equivalently, by x and $1 - x$) is saturated. Scheiderer proved earlier in [Manuscripta Math. 119, 395-410, 2005] that the preordering of $\mathbb{R}[x, y]$ generated by $x, 1-x, y$ and $1 - xy$ is saturated. In these two examples the associated basic closed semialgebraic set is not compact. These are the only examples known so far of saturated finitely generated preorderings in the 2-dimensional non-compact case. In contrast to this, in the 2-dimensional compact case many examples are known, see [Scheiderer, Manuscripta Math. 119, 395-410, 2005] and [Cimpric, Kuhlmann and Marshall, Advances in Geometry, to appear]. (Received January 08, 2009)