



## Constructing Truth-Tables in Propositional Multi-Valued Logics with DERIVE 4

[Eugenio Roanes-Lozano](#)

Dept. Algebra, Facultad de Educacion, Universidad Complutense de Madrid

Open PDF-File: [g\\_roanes.pdf](#) (169 KB)

### Abstract:

Producing truth-tables is very laborious but intuitive. The author presented at the 1st International Derive Conference (Plymouth, 1994) an approach to the Boolean case in DERIVE-2. It was published in The International DERIVE Journal. It was simple (it used vectors of vectors), but DERIVE-3 included a built-in function for the same purpose. An obvious extension is to construct truth-tables in multi-valued logics. The implementation presented here deals with Kleene's style (min/max) p-valued logic (for any integer  $p > 1$ ) and it can build truth tables, check tautologies and check tautological consequences. It will be included in DERIVE-5.

---