

16.1 ALGINT: Integration of square roots

This package, which is an extension of the basic integration package distributed with REDUCE, will analytically integrate a wide range of expressions involving square roots where the answer exists in that class of functions. It is an implementation of the work described in J.H. Davenport, "On the Integration of Algebraic Functions", LNCS 102, Springer Verlag, 1981. Both this and the source code should be consulted for a more detailed description of this work.

The ALGINT package is loaded automatically when the switch ALGINT is turned on. One enters an expression for integration, as with the regular integrator, for example:

```
int (sqrt (x+sqrt (x**2+1) ) /x, x) ;
```

If one later wishes to integrate expressions without using the facilities of this package, the switch ALGINT should be turned off.

The switches supported by the standard integrator (e.g., TRINT) are also supported by this package. In addition, the switch TRA, if on, will give further tracing information about the specific functioning of the algebraic integrator.

There is no additional documentation for this package.

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