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An algebraic number is usually represented as a root of some polynomial equation. When the Galois group of a normal extension containing the element is solvable, the element can be represented as a (nested) radical, using polynomial equations of the form $x^n = c$ only. Various problems present themselves: How to tell if such representation is possible, how to find one if it exists, and how to avoid ambiguities in radical representations, arising from multivalued root extraction? Also, it is desirable to be able to test nested radicals for equality and to ‘simplify’ them when possible.

We will discuss such problems and various examples with algorithmic solutions for practical implementation in a computer algebra system like Magma in mind. (Received September 28, 2005)