

L^AT_EX-Equation 2 CAS

Examples

1 The Jacobi Polynomial

Let us take a look to the Jacobi polynomial ([DLMF-Link](#)). We want to translate the general expression (section 1.1) to a CAS (section 1.3) representation. For instance we have the following term:

$$P_n^{(\alpha,\beta)}(\cos(a\Theta)) \quad (1)$$

1.1 Generic L^AT_EX

`P_n^{(\alpha,\beta)}(\cos(a\Theta))`

1.2 Semantic L^AT_EX

`\JacobiP{\alpha}{\beta}{n}@{\cos@{a\Theta}}`

1.3 Computer Algebra Systems (CAS)

From now on, be aware of the spaces between the symbols. For instance, a space between a and Θ is needed to show a and Θ are different variables. Otherwise Maple (for example) would think $a\Theta$ is one new variable.

1.3.1 Maple

`JacobiP(n, alpha, beta, cos(a_Theta))`

1.3.2 Mathematica

`JacobiP[n, \[Alpha], \[Beta], Cos[a_\[CapitalTheta]]]`