

# Demonstration of Mathematica software for the Painlevé test, special solutions, and recursion operators of nonlinear PDEs

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## **Abstract**

A demonstration of and a short discussion about Mathematica packages for:

- (i) the Painlevé integrability test for systems of nonlinear partial differential equations (PDEs);
- (ii) the testing and computation of recursion operators for systems of nonlinear PDEs;
- (iii) the computation of exact solutions expressible in hyperbolic and elliptic functions for nonlinear PDEs and differential-difference equations.