

Computer Algebra Independent Differential equations Tests

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1 Introduction

These reports show the result of running Maple and Mathematica on my large collection of differential equations. Diagram illustrating the test system is below.

1. Maple 2024 and Mathematica 14 Current version. Updated March 10, 2024.
2. Maple 2023.2.1 and Mathematica 14 Frozen version. March 9, 2024.
3. Maple 2023.1 and Mathematica 13.3.1 Frozen version. Oct 5, 2023.
4. Maple 2022.2 and Mathematica 13.2 Frozen version. December 20, 2022.
5. Maple 2022.2 and Mathematica 13.1 Frozen version. November 8, 2022.

The command used for Maple is

```
dsolve(ode,y(x), singsol=all)
```

The command used for Mathematica is

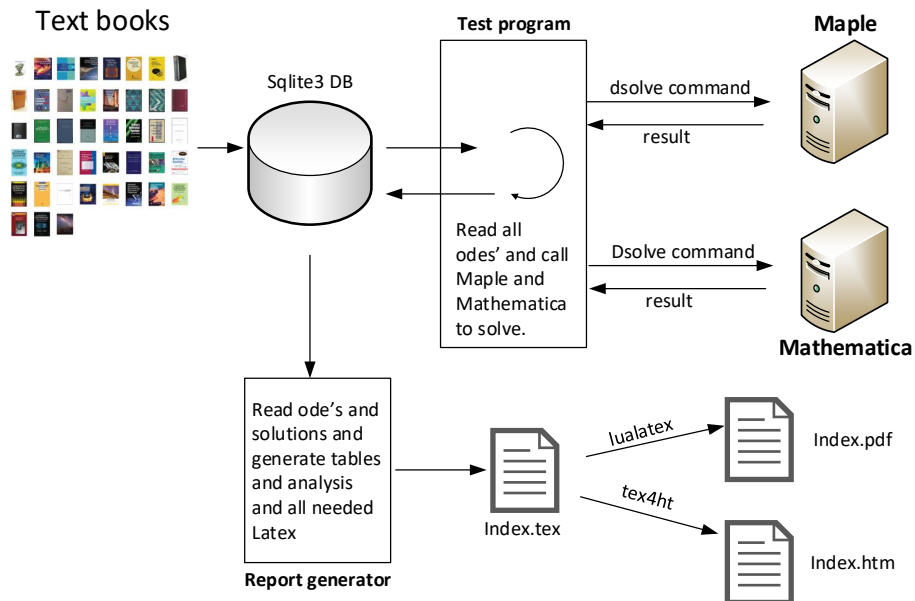
```
DSolve[ode,y[x],x,IncludeSingularSolutions -> True]
```

Each command was given 3 minutes of CPU time (not real time). If the command does not complete within this time it is counted as failed. in Mathematica TimeConstrained is used and in Maple timelimit is used.

2 Text books used

The text books used are listed on the page of my own ODE solver at this link [ODE solver](#).

3 Design of the test program



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Design of CAS ode test program

Figure 1: Design of the test program