

# COMP1206 Coursework: MathDoku

## Mark Scheme

Functionality	Marks
<b>Part One: A Skeleton GUI</b>	
GUI can be compiled and run on a lab machine according to provided README.txt file	1
All controls are present: <ul style="list-style-type: none"> <li>- Undo / redo actions</li> <li>- Clear the board</li> <li>- Load a game from file</li> <li>- Load a game from text input</li> <li>- Option to show mistakes on grid</li> </ul>	1
There is a designated area for the grid	1
The UI is resizable	1
<b>Part Two: The Grid</b>	
There is a square grid with distinct cells	1
Cages are highlighted with thick borders	1
One label is displayed per cage	1
The grid resizes correctly with the entire application to fill the available space	1
<b>Part Three: Cell Completion</b>	
Values can be entered into individual cells via keyboard	1
Values can be deleted again via keyboard	1
Values can be entered into individual cells via mouse	1
Values can be deleted again via mouse	1
<b>Part Four: Win and Mistake Detection</b>	
Win condition can be detected and an appropriate message is shown	2
Mistakes in rows and columns are highlighted when the appropriate option is selected (entire row / column is highlighted)	1
Mistakes in cages are highlighted when the appropriate option is selected (entire cage is highlighted)	1
Application can handle cages with the - and ÷ operators that consist of more than 2 cells	1
<b>Part Five: Clearing, Undo, Redo</b>	
Clearing the board works and a confirmation dialog is shown first	1
Undo works	1
Redo works	1
Undo / redo buttons are disabled / enabled appropriately	1
<b>Part Six: Loading Files</b>	
Loading puzzle works	3
There are two ways of loading puzzles (both from file or from text input)	1
Application can identify puzzles in the wrong input format and notify the user	3
<b>Part Seven: Font Sizes</b>	
Font for grid can be adjusted to one of at least three sizes	1

Text remains centred for cell values and appropriately aligned for cage targets when font size is changed	1
<b>Part Eight: Winning Animation</b>	
There is some animation on detecting a win	2
<b>Part Nine: Solver</b>	
Application can solve puzzles	3
Hint functionality works	1
<b>Part Ten: Random Game Generator</b>	
Application can generate random puzzles	2
Generated puzzles can be solved	1
Generated puzzles have exactly one solution	1

