Mathcad Prime 2.0

- Excel Component
  - Excel is among most commonly used engineering tools. Seamless and meaningful integration of Mathcad and Excel allows engineers to use Mathcad where Mathcad is a better tool for the job, while still leveraging benefits of Excel where it makes sense.
- 3D Plots
  - A picture is worth thousand words (or numbers). Engineers need to visualize 3-dimensional data for better understanding and communication.
- Symbolic calculation
  - Answers in Engineering are numeric – length of a bridge is 1000ft. However, to derive the right formula that gets us the answer, engineers can manipulate complex equations with the help of Mathcad's symbolic algebra engine.
- Performance
  - Allow users to better leverage, large memory, multi-core and multi-processor hardware to solve bigger and more complex problems.
  - Continued improvements to numeric calculation capability
- Collapsible Areas
  - Collapsible areas allow engineers to manage large documents by focusing on one part at the time. By collapsing segments of a document, engineers can create clearer presentations by hiding detail and letting the reader focus on important aspects.

Excel Component

Mathcad Prime 2.0

- **Features**
  - Integrate Excel spreadsheet within Mathcad worksheet
    - Documentation
    - Calculation
- **Benefits**
  - Leverage existing Excel spreadsheets for calculations
  - Enhance readability of worksheets by including data representation in familiar (Excel) form

Inputs

$excel_{\text{“B2”}} := data$

run	test 1	test 2	test 3	test 4	test 5	test 6
1	9.55899832	5.39341502	4.62073832	8.62219531	7.79658314	9.96795644
2	0.08817101	2.75887234	5.87911718	8.37607619	4.84930583	7.43727675
3	1.51557162	4.25164882	5.17120055	7.51536424	1.68995889	4.91884263
4	9.66604101	1.53255531	8.21673036	1.91350644	8.17183693	1.55563474
5	8.34656833	5.17018523	4.26211691	9.4933842	5.49540588	4.71721648
6	8.39428639	5.00912175	0.27496173	5.72572342	5.31316957	8.43036705
7	1.4028116	8.34616332	6.00242529	2.52720473	0.01619293	8.06239398
8	4.36712706	6.9620637	4.36683118	5.77866594	6.28666998	5.04149262
9	0.94404227	9.31489515	8.94601136	2.27318391	4.1071173	6.28070194
10	1.84287655	5.55142366	2.42864653	6.04727127	5.84605447	4.94448254
11	7.27662452	6.67784927	3.15019812	3.05821958	1.08577546	8.51219003
MAX	**9.66604101**	**9.31489515**	**8.94601136**	**9.4933842**	**8.17183693**	**9.96795644**

Outputs

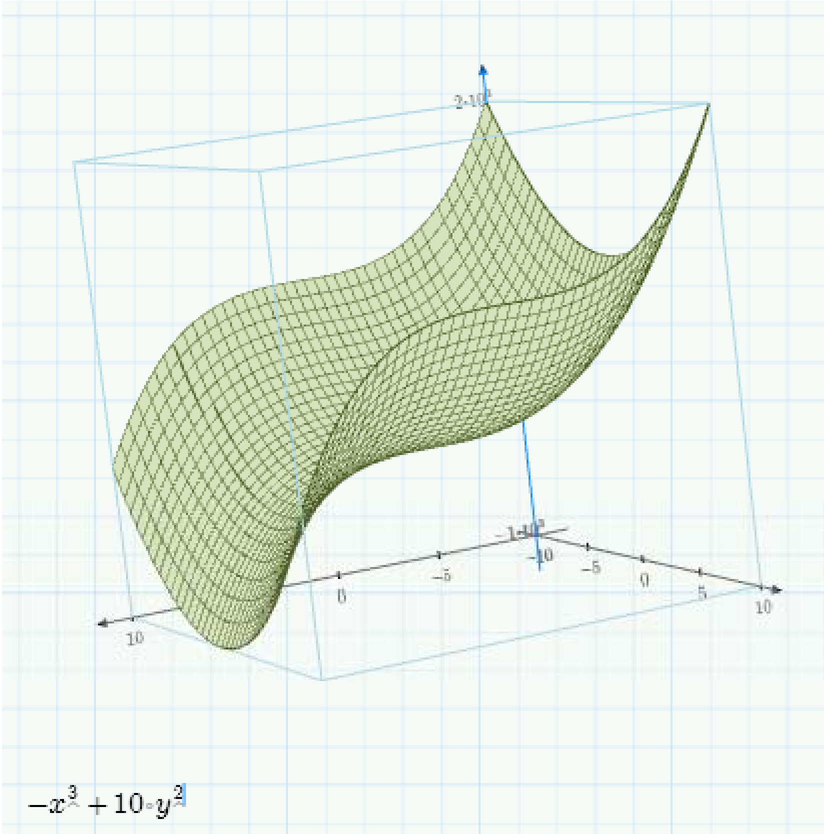
$V_{max} := max\left(excel_{\text{“B2:G12”}}\right)$ $V_{min} := min\left(excel_{\text{“B2:G12”}}\right)$

$V_{max} - V_{min} = 9.952$

Mathcad Prime 2.0

- **Features**
  - Surface
  - Curve
  - Scatter
  - Plotting data and functions

- **Benefits**
  - Get better understanding of 3D data and functions
  - Make results easier to understand and interpret by including 3D visualizations



Symbolic Calculation

Mathcad Prime 2.0

- **Features**
  - Symbolically evaluate expression
  - Patented integration between symbolic and numeric calculation
  - “Explicit” evaluation
- **Benefits**
  - Helping engineers derive and simplify equations
  - Making calculations easier to review and understand by keeping formula derivations within the document

$$m := 2\ kg \qquad F := 7.1\ N$$

$$a := \frac{F}{m}$$

$$a \xrightarrow{explicit, ALL} \frac{7.1\ N}{2\ kg}$$

$$a = 3.55\ \frac{m}{s^2}$$

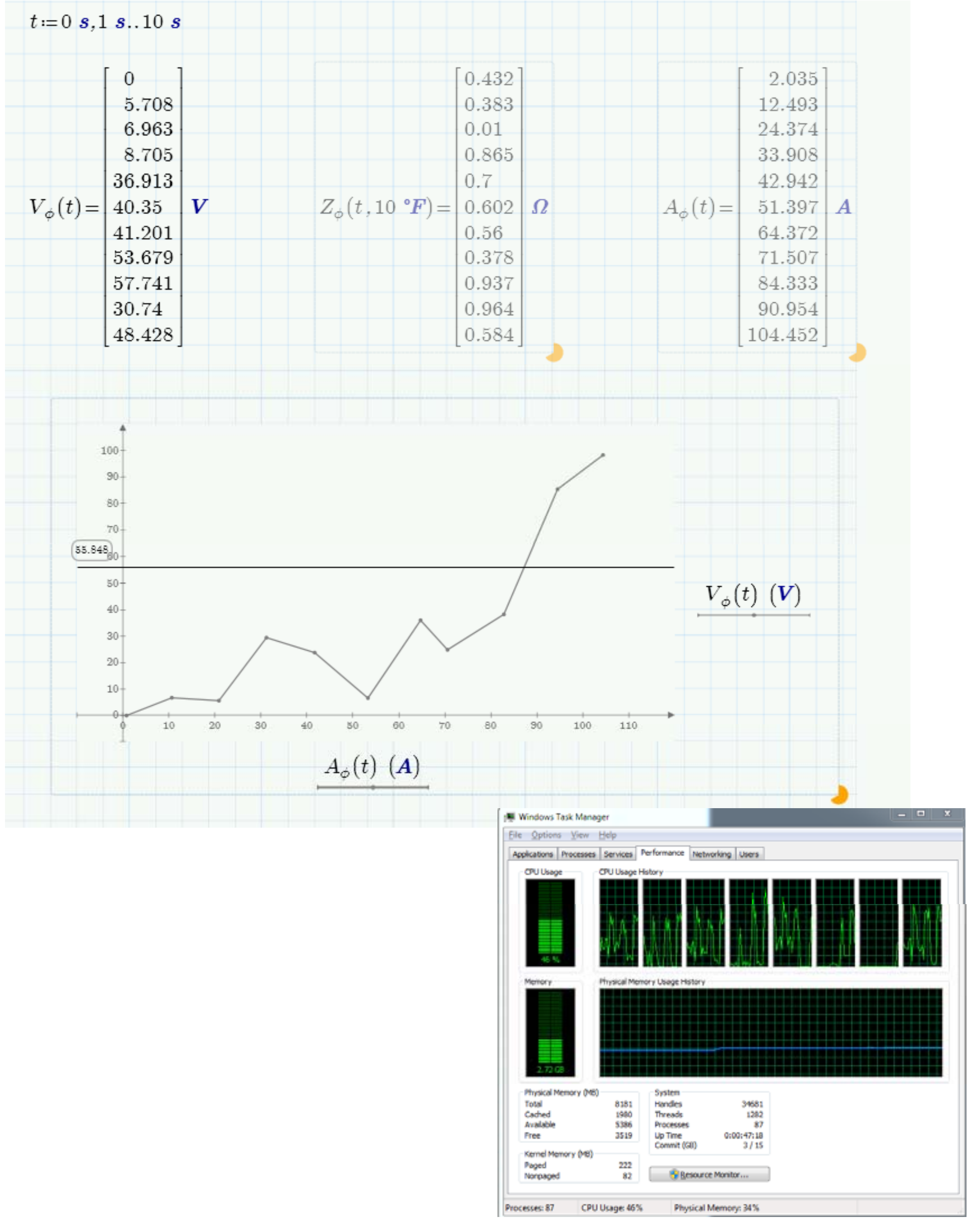
$$a \cdot x^2 + b \cdot x + c = 0 \xrightarrow[simplify]{solve, x} \begin{bmatrix} -\dfrac{b + \sqrt{b^2 - 4 \cdot a \cdot c}}{2 \cdot a} \\ -\dfrac{b - \sqrt{b^2 - 4 \cdot a \cdot c}}{2 \cdot a} \end{bmatrix}$$

$$\int sin(t)\, dt \xrightarrow{laplace} -\frac{s}{s^2 + 1}$$

Mathcad Prime 2.0

- **Features**
  - Native 64bit support
  - Leveraging multi-core architecture with the new MKL library for linear algebra
  - Support for multi threading
  - Improved solver for optimization and non-linear problems

- **Benefits**
  - Better leverage of investment in hardware
  - Ability to solve larger and more complex problems
    - Less need to rely on “programming” solutions that do not offer benefits of Mathcad



Collapsible Areas

Mathcad Prime 2.0

- **Features**
  - Place document content within an area
  - Collapse and open an area to hide and show content
  - Move entire are together
- **Benefits**
  - Better organization of the document by collapsing areas user in not focused at the moment
  - Create better presentation by hiding unnecessary detail
  - Protecting sensitive design detail (IP) in the printed document