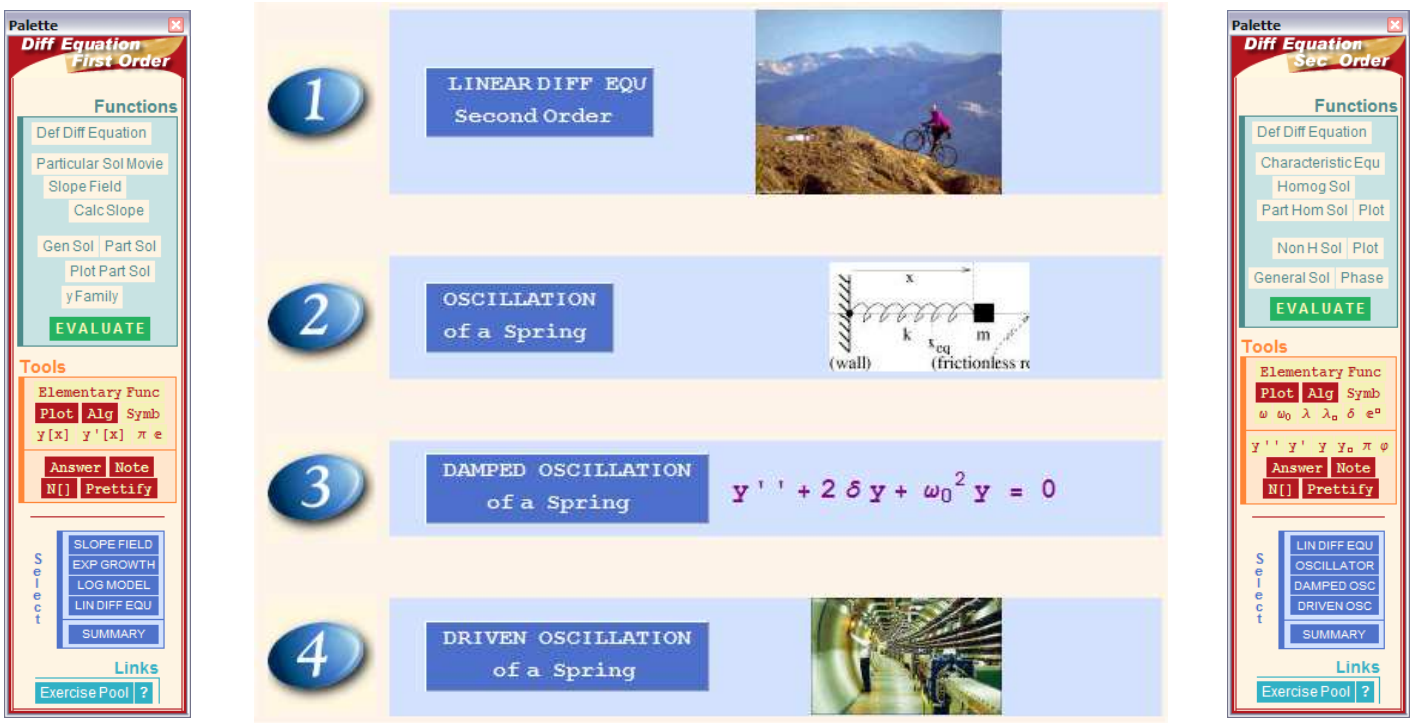
Top Level Mathematics Software for Math Classes

MDesktop

M@th Desktop (MD) is a modern, interactive **teaching and learning software** for mathematics. In order to run M@th Desktop you need *Mathematica* 4.0 - 6.0. MD is designed for teachers and students of:

* High Schools
* Technical Schools, Commercial Schools
* Colleges and Universities (Undergraduates)
* Universities of Applied Science

MD comprises **tools for teachers** to create tests, tables, data fitting problems, palettes, notebooks and even movies. An exercise pool with additional problems is provided. Below you see a MD Notebook with two palettes:



The current version of MD consists of the 6 modules **MD Core**, **MD Functions**, **MD Differentiation**, **MD Integration**, **MD Linear Algebra** and **MD Statistics**. Each module is made up of many palettes and accompanying notebooks. The modules assist the teacher in the class but do no replace him. All modules work fine with **every math textbook** in math classes.

In an **EU math project** 2008-2010, entitled “PC Based Math Projects for High School Students”, MD was chosen once more as the learning software. 14 schools from 11 countries are going to participate. The aims of the project are:

* Using MD to assist conventional teaching methods using the blackboard
* Supporting students to reach their relevant key stages according to their level of education
* Fostering the acceptance of mathematics by using real life examples, which can be solved easily with the help of the computer

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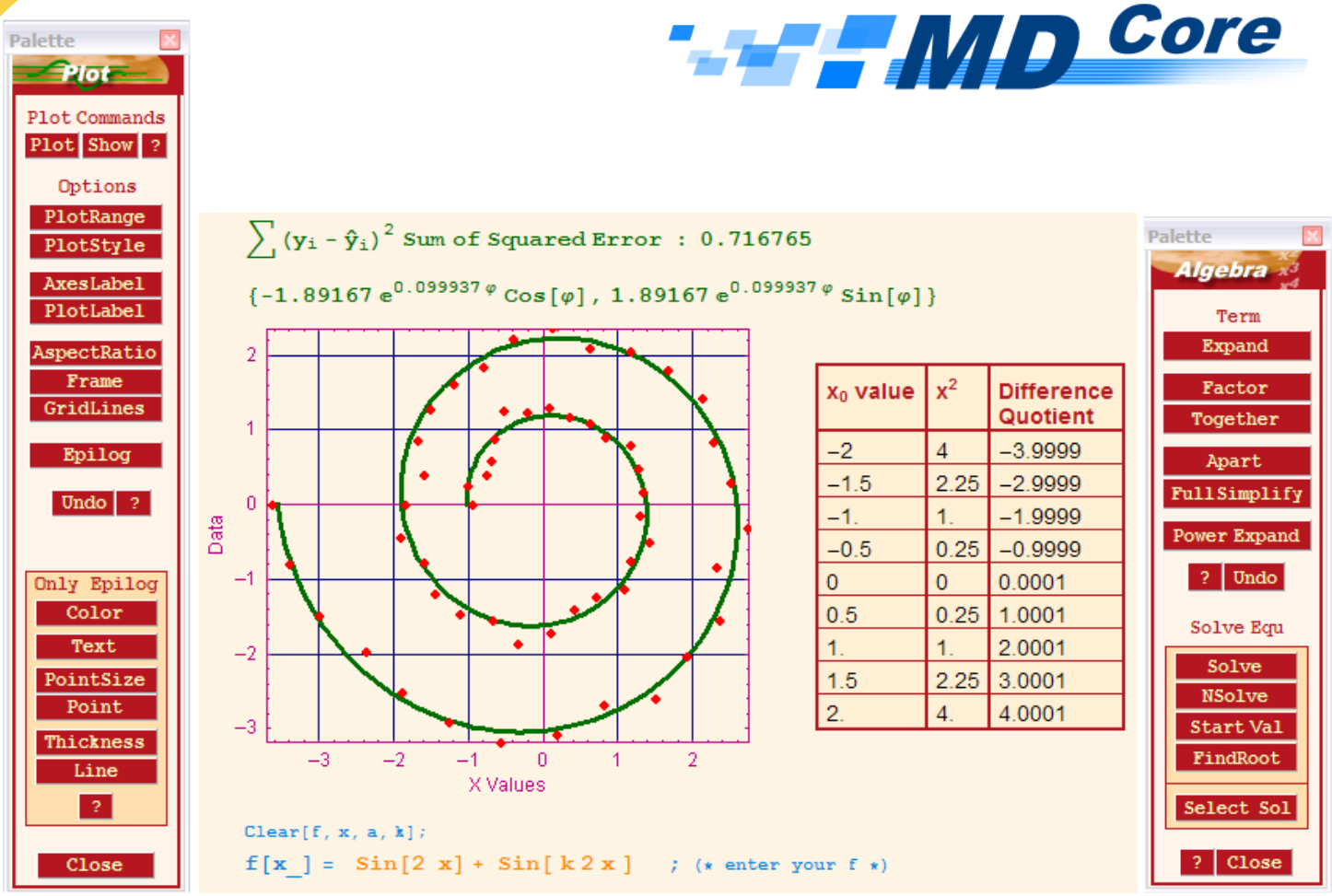
MD Core



The module **MD Core** contains practical palettes and tools for teachers and students. The **Student helper palette** is ideal for students in the class. It offers acces to the following palettes just with a click:

The **Plot palette** allows you to draw functions with various options. With the **Algebra palette** you can transform expressions and solve equations. The **Table palette** provides tools to create and read tables.

With **MD Core** you can **plot data** and **fit data** with built-in models and your own models. **MD Core** provides a gallery of animations, so called **movies**, and tools to create your own ones.

M@th Desktop is **highly customizable** for teachers and students. In M@th Desktop the fully developed programming language of *Mathematica* is available! Therefore you create as many **functions**, **palettes**, **notebooks** and **packages** as you like for all MD modules.

The menu of **MD Core** offers **10 tutorials** for *Mathematica* and M@th Desktop like working with MD helper palettes, introduction to *Mathematica*, programming in *Mathematica* and graphics programming.

The teacher tools of **MD Care** let you compose **tests**, **practice sheets** and **exercise pools** for students. The problems and the solutions are saved seperately.

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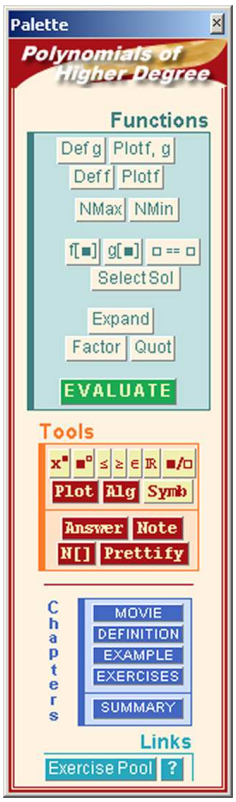
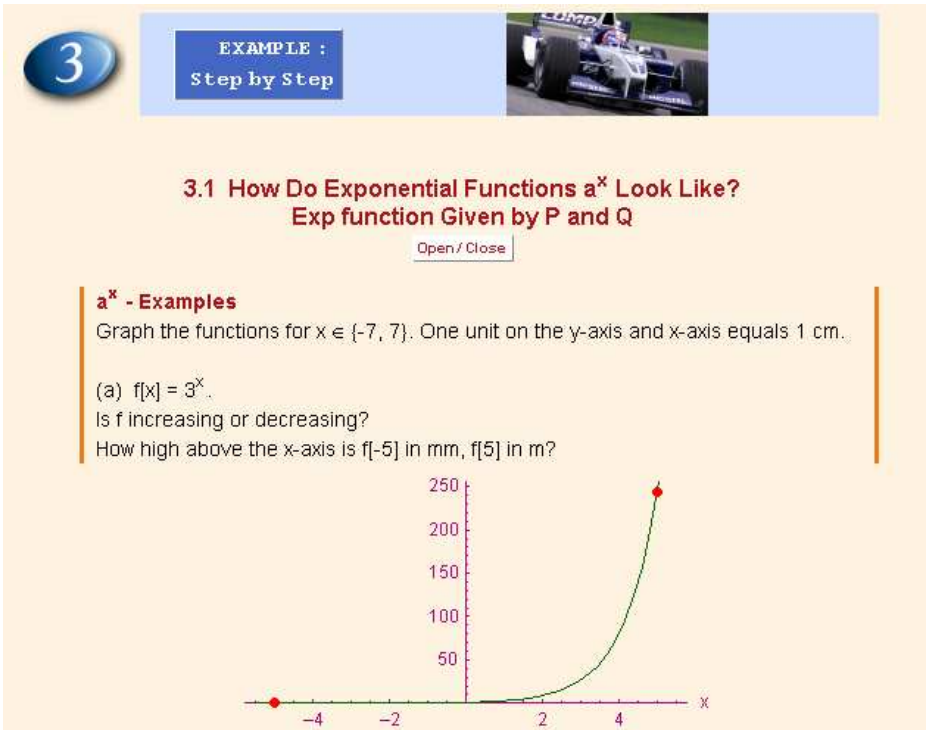
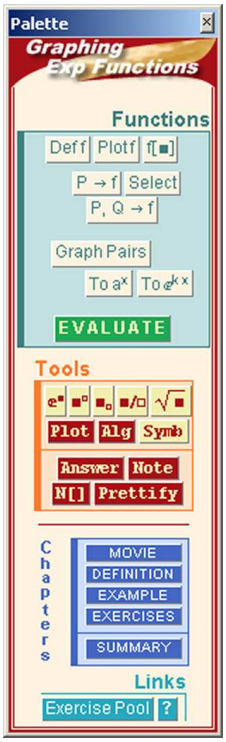
MD Func







The functions & graphs module provides tools and examples to assist in learning elementary functions. It consists of **26 MD palettes, each with an accompanying notebook and additional exercises**.

Polynomial and rational functions:

* Graphing Linear Functions
* Two Linear Functions
* Linear Functions in Physics and Economy
* Fitting Polynomial and Rational Models to Data
* Quadratic Functions
* Polynomial Functions
* Rational Functions
* Creating Random Numbers

Exponential and logarithmic functions:

* Graphing Exponential Functions
* e, Compound Interest
* e, Compound Interest - UK
* Growth, Decay Log Functions
* Fitting Exp Log Models to Data
* Log Functions
* Logistic Models
* Recursive Models
* Exp, Log Equations, Expressions
* Creating Random Numbers

Trigonometric functions:

* Right Triangle
* Sin Cos Tan
* Fitting SIn Cos Tan Models to Data
* Creating Random Numbers
* Sine and Cosine Rules
* Trig Equations, Expressions
* Polar Coordinates

Conic sections:

* Ellipse
* Parabola
* Hyperbola
* Complex Numbers

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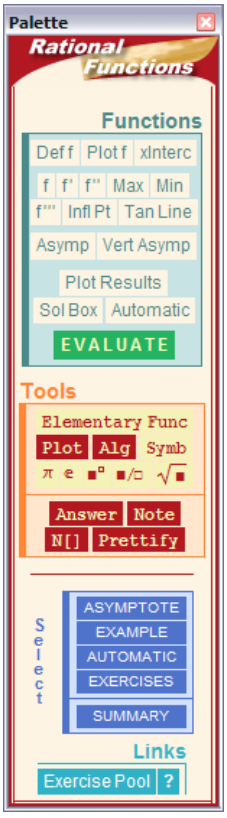
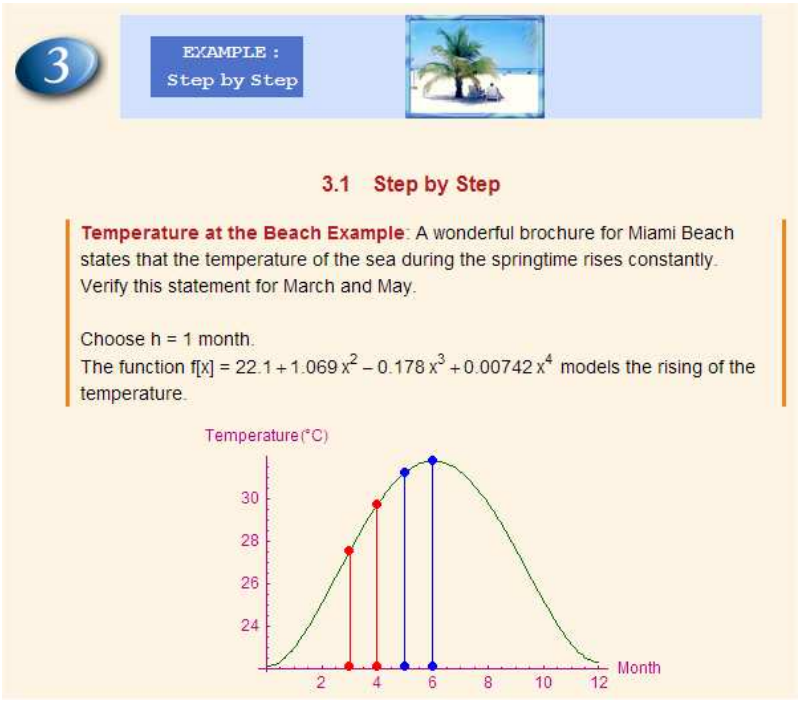
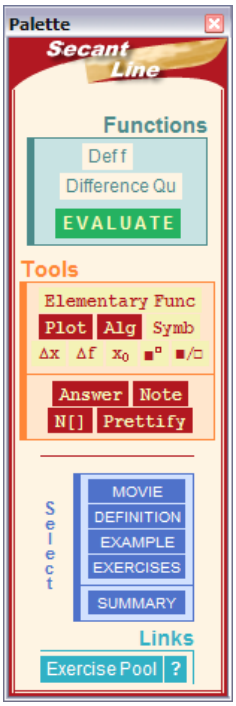
MD Diff







The basic and advanced material work fine together with **any math textbook**.

Basic material: The basic material provides tools and examples to assist in learning the basics of differentiation. It consists of **7 MD palettes, each with an accompanying notebook and additional exercises.**

* Average Velocity
* Secant Line
* Differential Quotient
* Limits
* Basics Diff Rules
* Product, Quotient, and Chain Rules
* Derivatives

Advanced material: This section involves learning the various applications of the derivative. Advanced material consists of **9 MD palettes, each with an accompanying notebook and additional exercises**.

* Max Min Infl Point
* Curve Sketching Rational Functions
* Curve Sketching General Functions
* Optimization 2D, 3D
* Partial Derivatives
* Implicit Differentiation
* Parametric Curves
* Polar Curves
* Curvature

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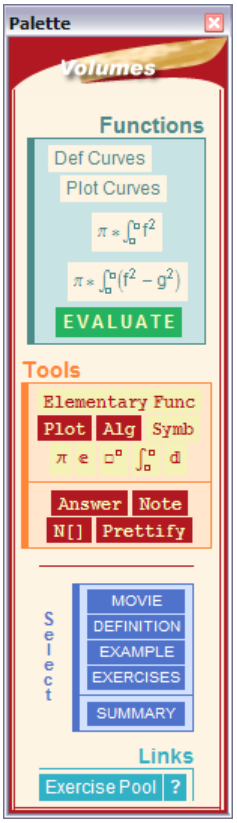
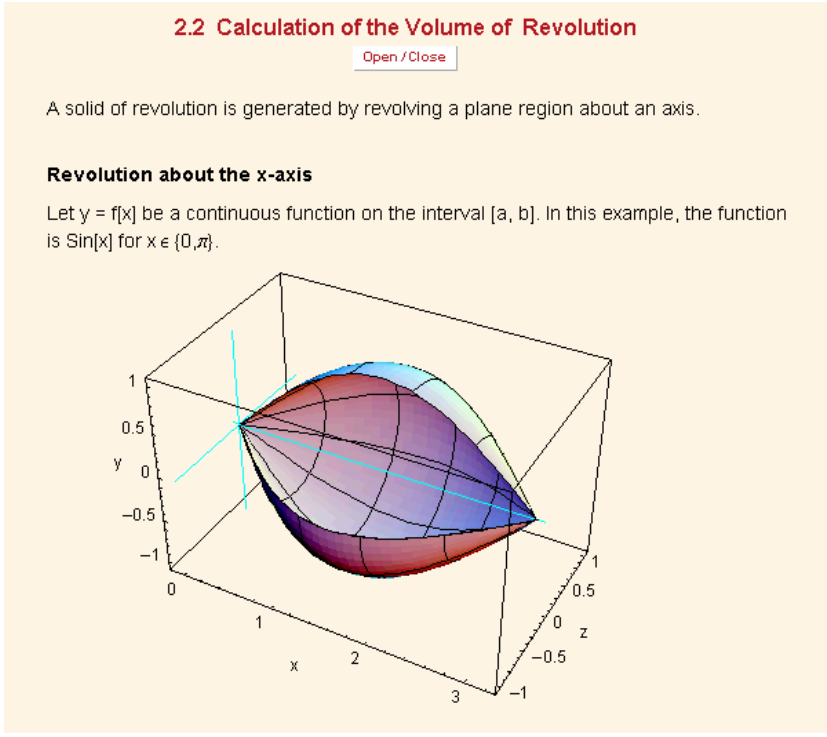
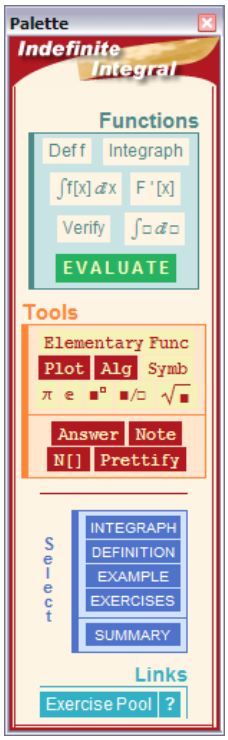
MD Integr







The basic and advanced material work fine together with **any math textbook**.

Basic material: Basic material provides tools and examples to assist in learning the basics of integration. It consists of **4 MD palettes, each with an accompanying notebook and additional exercises**.

* Indefinite Integral
* Integration Techniques
* Riemann Sums
* Definite Integral

Advanced material: This section involves learning the various applications of the integral. Advanced material consists of **10 MD palettes, each with an accompanying notebook and additional exercises**.

* Area Between Curves
* Arc Length
* Volumes
* Surfaces
* Center of Mass
* Work
* Laplace Transformation
* Fourier Transformation
* Diff Equation First Order
* Diff Equation Second Order

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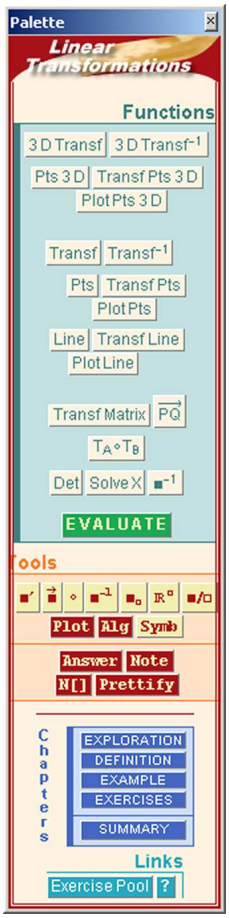
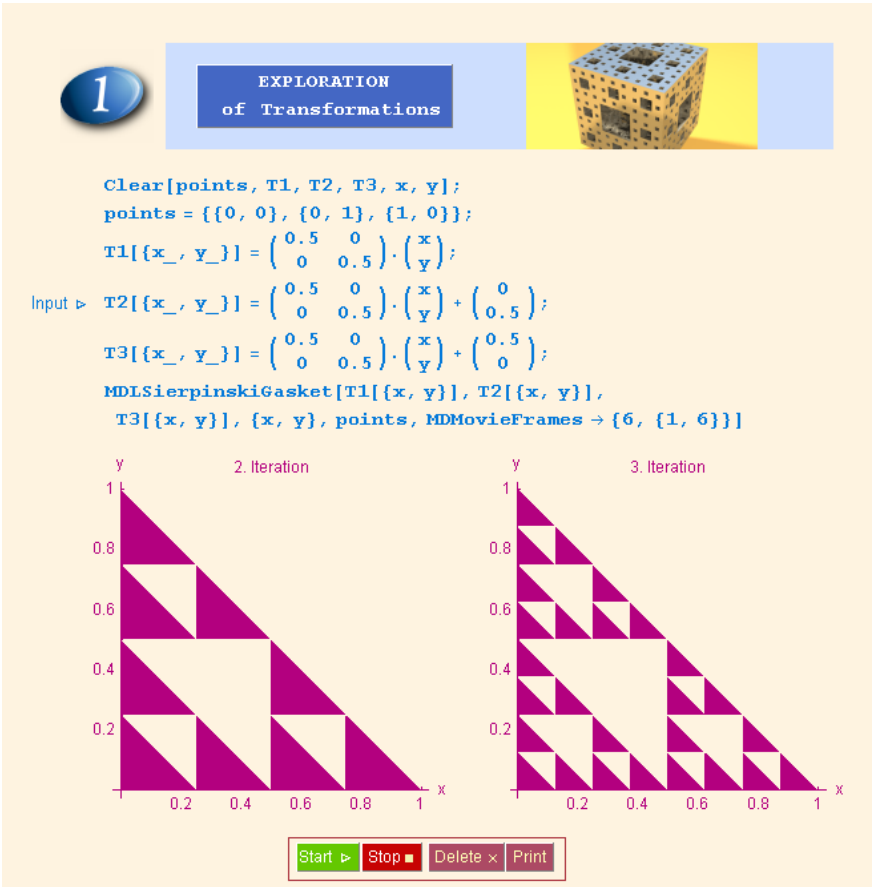
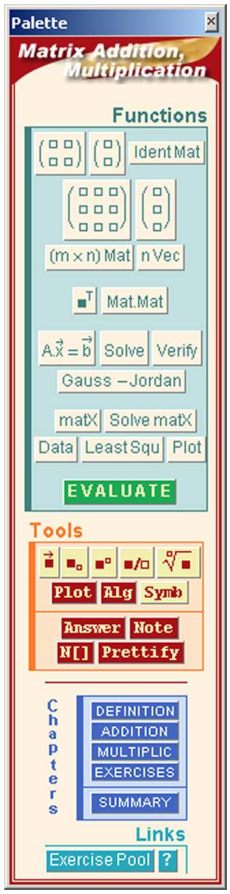
MD LinAlg







The basic and advanced material work fine together with **any math textbook**.

Basic material: Basic material provides tools and examples to assist in learning the basics of linear algebra. It consists of **7 MD palettes, each with an accompanying notebook and additional exercises**.

* Linear Equations
* Linear Independence, Basis
* Matrix Addition, Multiplication
* Inverse Matrix, Determinant
* Vectors
* Scalar Product
* Cross Product

Advanced material: This section involves learning of more complex linear algebra applications. Advanced material consists of **3 MD palettes, each with an accompanying notebook and additional exercises**.

* Linear Transformations
* Eigenvalues, Eigenvectors
* Conic Sections

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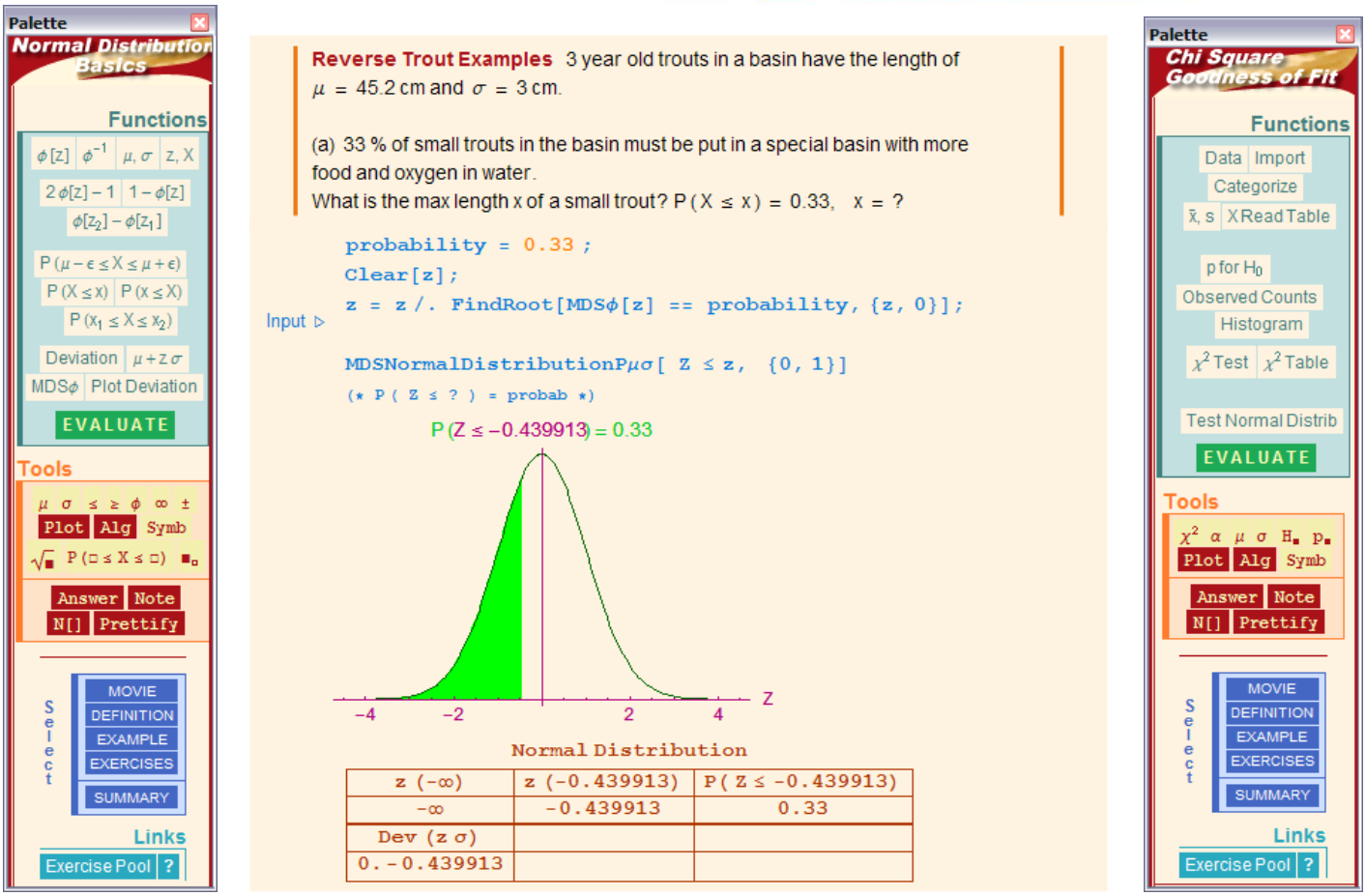
MD Statistics



The basic and advanced material work fine together with **any math textbook**.

Basic material: Basic material provides tools and examples to assist in learning the basics of statistics. It consists of **6 MD palettes, each with an accompanying notebook and additional exercises** and **3 MD notebooks** for **Random Number Creation** and **SimulationPrograms**.

* Binomial Distribution Basics
* Poisson Distribution Basics
* Normal Distribution Basics
* Test of Hypothesis
* Confidence Interval
* Random Number Creation
* Simulation Programs

Advanced material: This section involves learning of more complex statistic applications. Advanced material consists of **3 MD palettes, each with an accompanying notebook and additional exercises** and **2 MD notebooks** for **Random Number Creation** and **Simulation Programs**.

* Linear Regression
* Linear Correlation
* Goodness-of-Fit Test
* Assessing Normality of Data
* Random Number Creation
* Simulation Programs

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Price List

M@th Desktop 5.0 requires *Mathematica*© for Windows 4.0 - 6.0. M@th Desktop prices do not include *Mathematica*©. If you buy a single license of MDTools or MD the $MachineID and $LicenseID of *Mathematica*© are required.

M@th Desktop 5.0 Package (*Mathematica* 4.0-6.0)

MD single license, student version	**EURO**	**39,—**
MD single license, instructor version	**EURO**	**49,—**
MD classroom license*		
rental for a school year	**EURO**	**190,—**
purchase	**EURO**	**570,—**
MD campus license** for universities		
rental for an academic year	**EURO**	**960,—**
purchase	**EURO**	**2.880,—**

The M@th Desktop 5.0 package consists of 6 modules: MD Core, MD Functions, MD Differentiation, MD Integration, MD Lineare Algebra and the MD Statistics package. In the instructor version all examples are calculated. This version is delivered free of charge together with the classroom license or the campus license.

MD 5.0 developer license: required for EU-projects and projects between continents, source code partly included, price on application.

* A classroom license for MD products runs on up to 18 computers in a computerlab.

** A campus license for MD products runs on all computers on the campus.

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