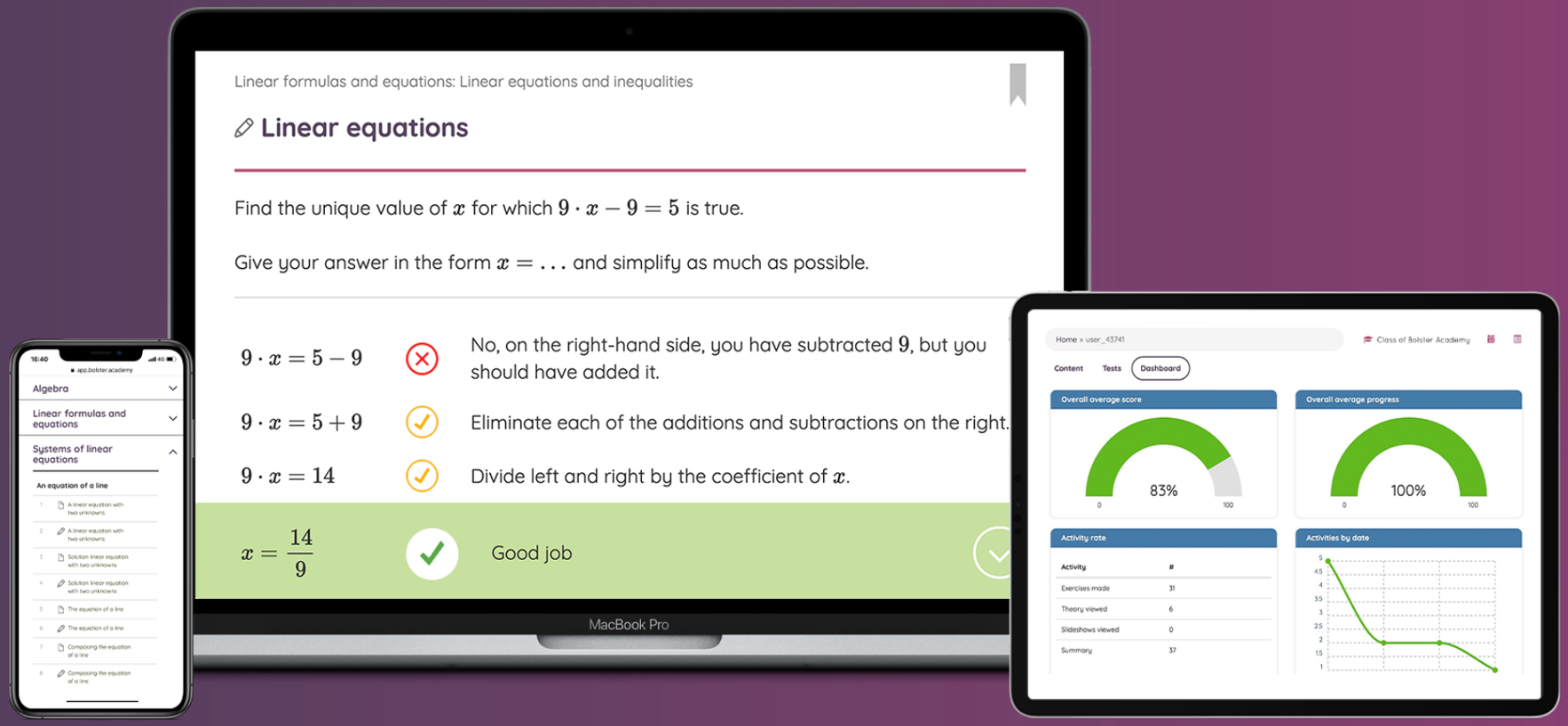


SOWISO

Factsheet

Latest update: 05/03/2020

SOWISO is a learning environment for higher education math and statistics.

Easily construct your course by using our plug-and-play materials, edit our materials or create your own!

Save time

Our learning platform saves teachers time otherwise spent on repetitive tasks, such as checking and grading. Teachers are able to focus their time on building a course that's perfect for their desired learning goals, so they are able to choose topics, homework exercises, and tests. Pick one of several plug-and-play courses, or use their components to construct a module yourself. Our detailed learning analytics allow you to identify the red flags. This allows you to focus on those topics, or those students, who need that extra bit of attention.

Engage students

Mathematics mastery can only be achieved through practice and individual attention. To ensure students never feel stuck, our platform always provides helpful feedback on mistakes and intermediate steps towards the correct final answer. With endless randomization of exercises, students can always go back and try again. An overview of their progress, as well as smaller formative tests give learners a clear understanding of course goals. Adaptive learning ensures students with different knowledge levels follow different learning paths.

VALUE FOR TEACHERS AND STUDENTS

Advanced mathematical engine

A powerful computer algebra system at the core of our learning environment guides students along as they solve problems. It not only sees that a mistake is made, but also what that mistake is. This allows our software to provide targeted hints at any step in the solving process to improve subject understanding.

Randomisation

Our platform randomizes variables in both exercises & examples, allowing for endless practicing.

Mathematical input editor

Students can tackle open exercises with calculations or mathematical formulas using their physical keyboard or an intuitive on-screen mathematical input editor supporting everything from simple algebra to advanced calculus. *See Fig. 1*

25 types of exercises

Apart from the open mathematical questions, the software contains 25 other exercise types, including geometrical exercises, graphical input (e.g. lines, vectors, formulas), and of course multiple choice, drag-and-drop, and essays.

Testing

Our embedded testing module creates different randomized tests for students (diagnostic, formative, summative), and even checks and grades them. Teachers can act as secondary reviewers and therefore focus their energy on classroom settings, instead of spending too much time on repetitive grading tasks. *See Fig. 2*

Fig. 1 - Mathematical input editor

An intuitive on-screen mathematical input editor

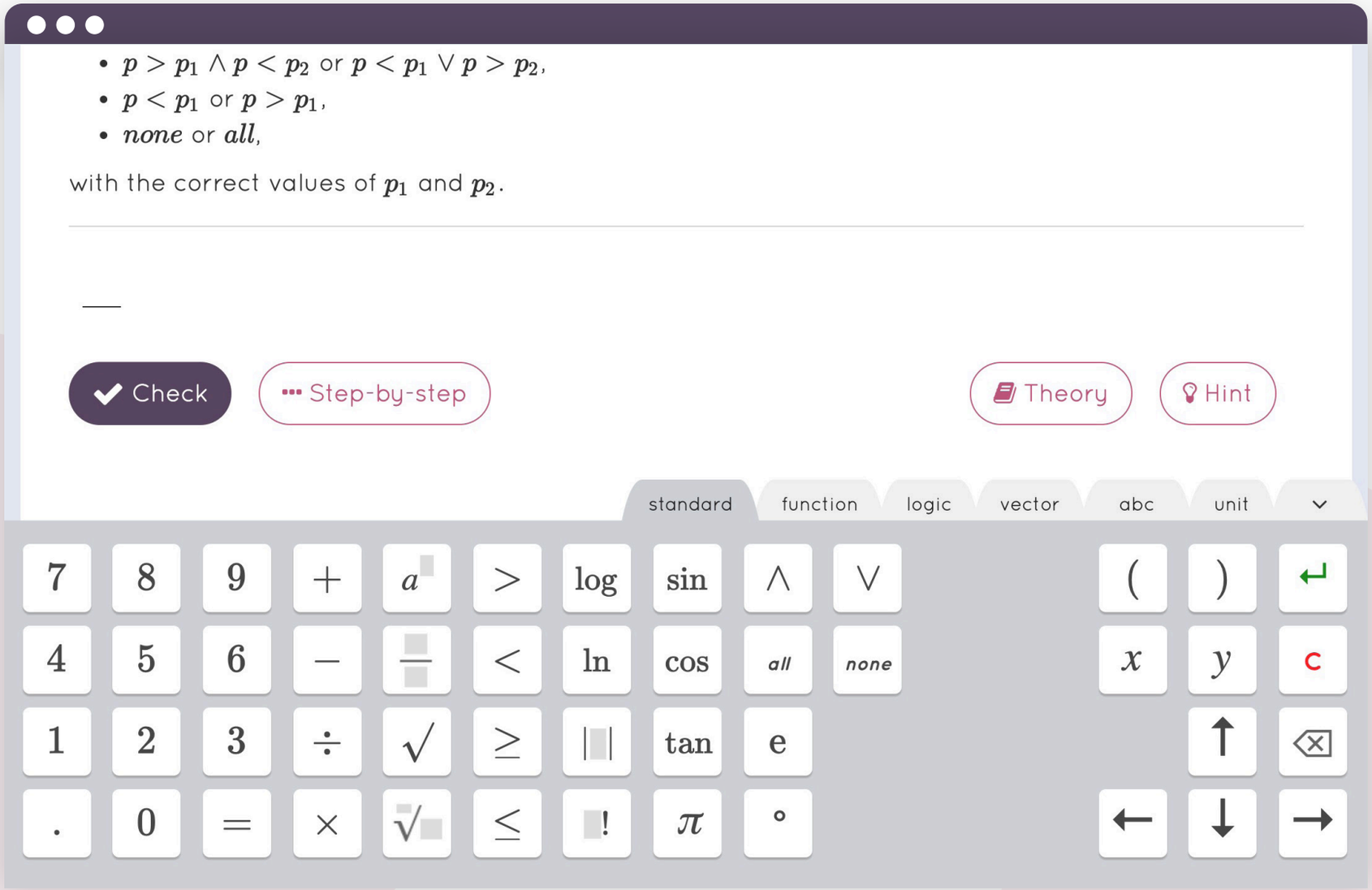
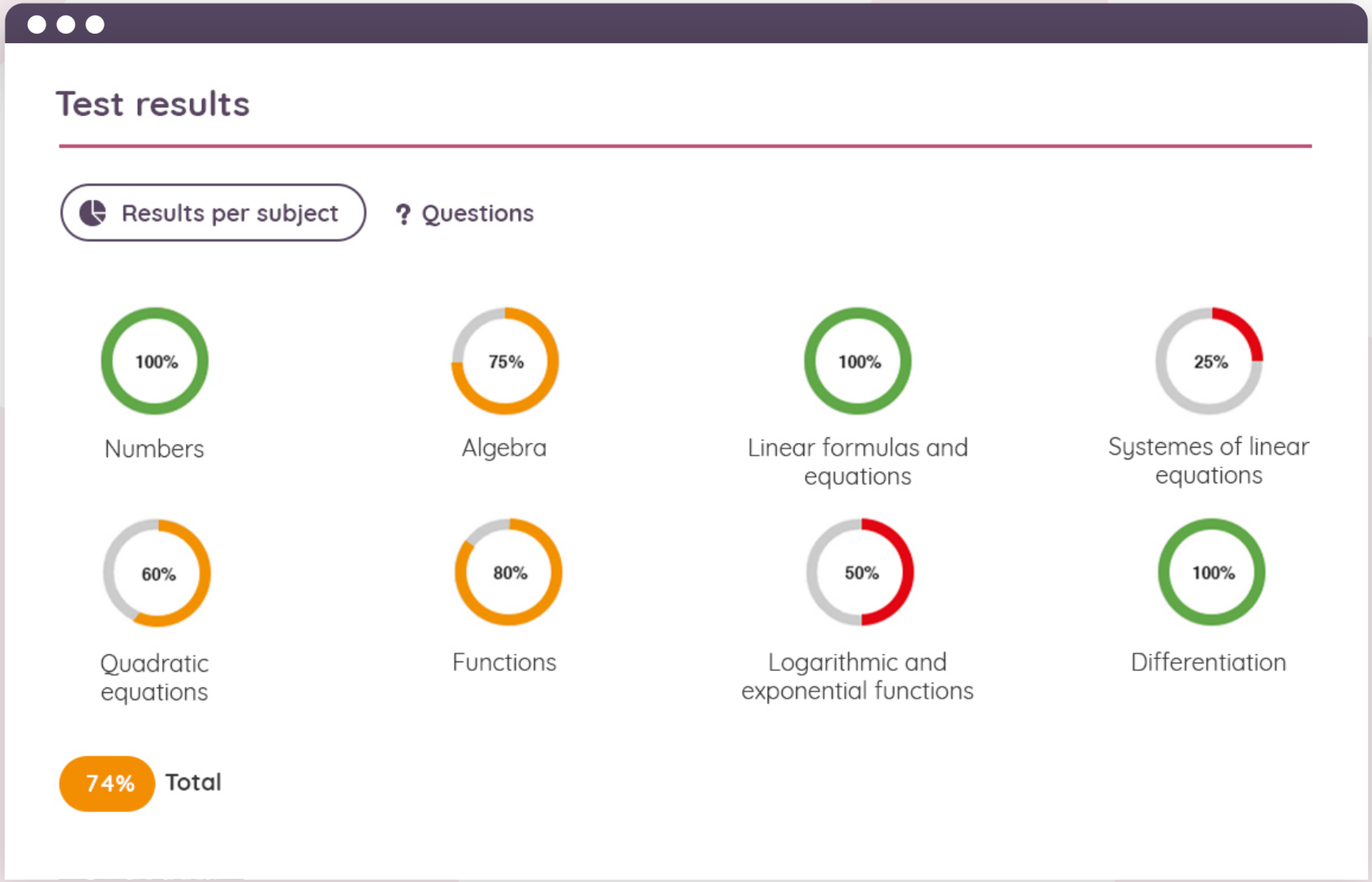


Fig. 2 - Testing

Create a test, we'll do the rest



VALUE FOR TEACHERS AND STUDENTS

Interactive elements

Our theory pages include many interactive elements, such as randomized examples, graphs, animations and videos. They can even be presented as a slideshow!

Forum

A forum encourages student-teacher and peer-to-peer interactions. When struggling with a maths or science problem, students can ask exercise or theory specific questions on the forum. On exercises, the software shows the exact steps taken by the student when presenting their question on the forum, which helps the teacher offer targeted help to the student.

Learning analytics

A reporting tool shows overall progress and red flags. Further detailed learning analytics help teachers drill down and identify specific weaknesses in students and content. These progress reports are available at any desired level of detail, and are downloadable. *See Fig. 3*

Adaptivity

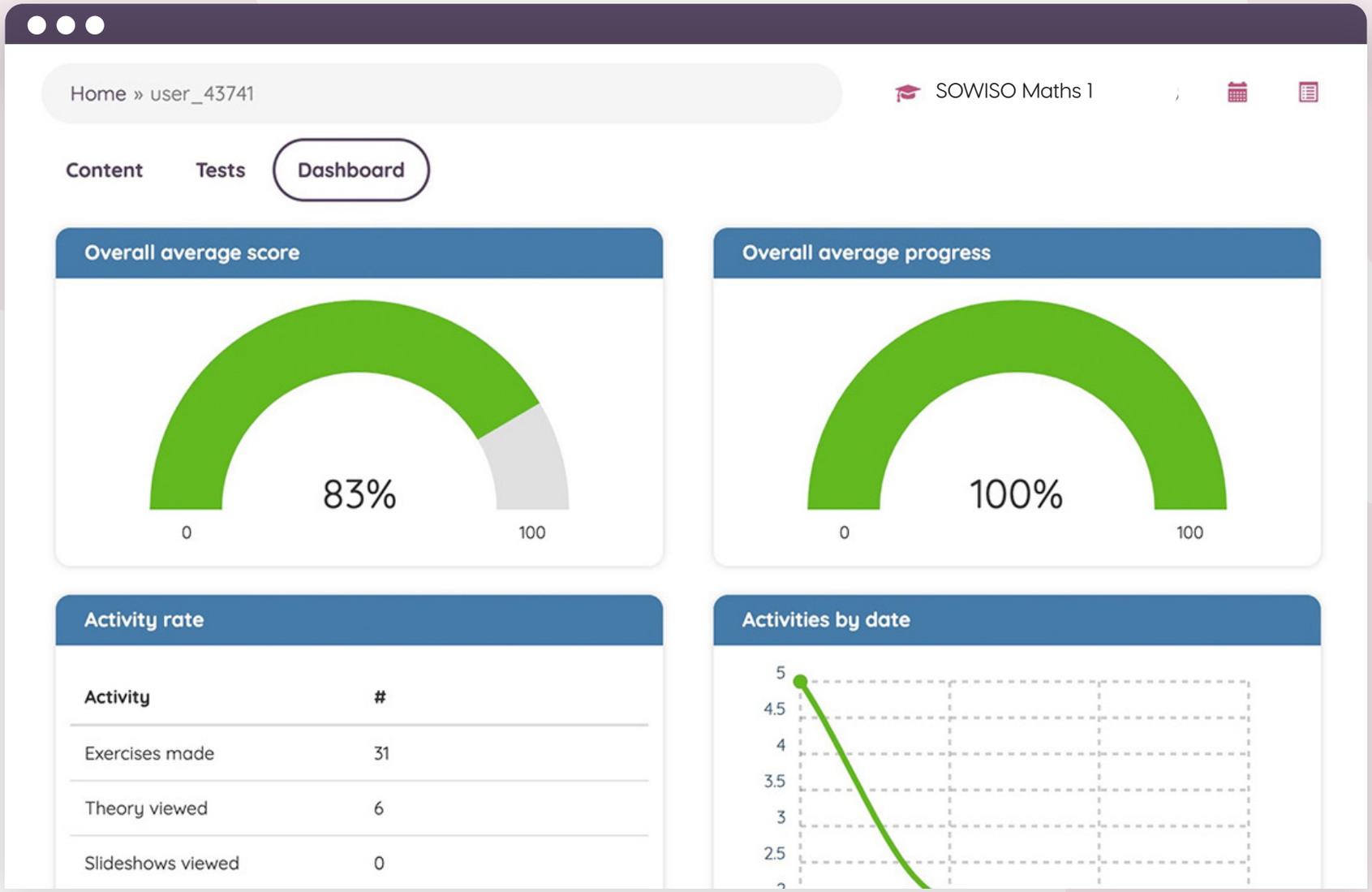
Teachers can use either a linear or adaptive presentation of content. Our adaptive learning functionality continuously analyses student answers on each exercise, and follows up with either an easier or harder exercise. Learning paths are also customizable: chapters are unlocked when previous chapters are mastered, and optionally after a chapter-based diagnostic test.

Gamification

Light gamification elements can be enabled by the teacher. Students can earn achievement badges when they complete learning-based challenges. Gamification is a great way to increase student engagement and improve learning outcomes.

Fig. 3 - Student progress

Gain detailed insights on student progression



VALUE FOR TEACHERS AND STUDENTS

Intergration with LMS

Allow students to log in through their LMS (e.g. Blackboard, Canvas, Moodle, Brightspace), and automatically push grades to the LMS gradebook.

Detailed hints and feedback

Mathematical equivalency is always recognized, so students are presented with useful feedback when they've made a mistake or when their answer is not yet in the required final form. *See Fig. 4*

Practice materials

Use our large database of 10,000+ exercises, neatly bundled in courses; or write original material yourself. *See Fig. 5 & 6*

Statistics

10,000,000+
Exercises completed

300,000+
Tests submitted

100,000+
Students helped

3,000+
Courses delivered

Fig. 4 - Exercise

Students get detailed hints and feedback on every answer attempt

Feedback

Calculate the derivative $h'(x)$ of $h(x) = 7 \cdot \sin(8 \cdot x)$.

$h'(x) = 7 \cdot \cos(8 \cdot x)$ — No, you may have forgotten to multiply by $g'(x)$, in which $g(x) = 8 \cdot x$.

$h'(x) = 7 \cdot \cos(56 \cdot x)$ — The chain rule indicates that the derivative contains $f'(g(x))$, in which $f(x) = 7 \cdot \sin(x)$ and $g(x) = 8 \cdot x$. Thus, the the argument of the cosine must be equal to $g(x)$. This is not the case in your answer.

$h'(x) = 56 \cdot \cos(8 \cdot x)$ — Great job

Fig. 5 - Theory page 1

We provide explanations with interactive elements

Trigonometry: Angles with sine, cosine and tangent

Angles in radians

So far we have expressed angles in degrees, but in mathematics angles are often expressed in radians. To introduce radians we will use a circle with radius 1. We call this the unit circle.

Unit circle

The **unit circle** is a circle with origin center $[0, 0]$ and radius 1.

The point $P = [x_P, y_P]$ starts at $[1, 0]$ and moves counterclockwise across the unit circle. The **angle of rotation** is called α.

Therefore $\sin(\alpha) = y_P$ and $\cos(\alpha) = x_P$.

In this way we can also define angles greater than 90° degrees with the sine and the cosine.

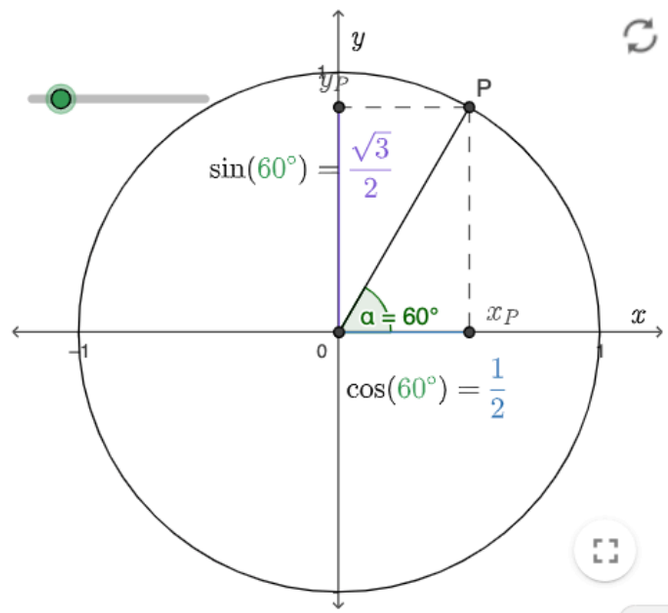


Fig. 6 - Theory page 2

We provide explanations with interactive elements

Quadratic equations: Parabola

Parabola

Graph

The graph of a quadratic

$$y = ax^2 + bx + c$$

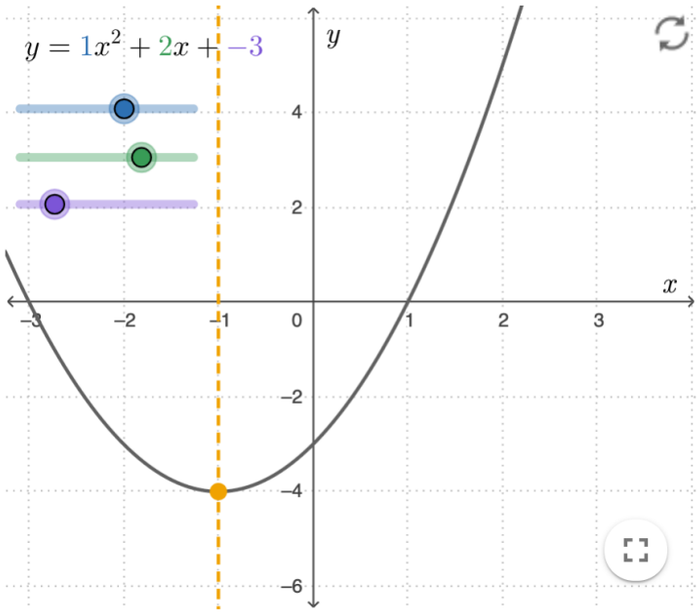
is called a **parabola.**

If $a > 0$ the graph is an **upward opening parabola.**

If $a < 0$ the graph is a **downward opening parabola.**

An upward opening parabola has a minimum and downward opening parabola has a maximum. In both cases, this point is referred to as the **vertex** of the graph.

The parabola is symmetrical about the vertical line through the top of the graph. Such a line is also called a **line of summetru**.



OUR PLUG AND PLAY COURSES

SOWISO Factsheet

Basic Maths

Algebra, precalculus and calculus for college and university students. Contains topics ranging from numbers to differentiation and integration.

Calculus

Mathematics for university students. Contains polynomials, trigonometric functions, sequences and series, differentiation and more.

Calculus for the Social Sciences

Mathematics for economics students. Contains functions, differentiation, (multivariate)optimisation, focus subjects like elasticity, and more applications.

Linear Algebra

Linear Algebra for college & university students. Contains vector calculus / spaces, matrices and matrix calculus, inner product spaces, and more.

Statistics

Statistics for college and university students. Contains descriptive statistics, probability theory, inferential statistics, hypothesis testing, data analysis and more.

Differential Equations

Differential equations for college and university students. Contains direction fields, separation of variables, linear 1st & 2nd order ODEs, LaPlace transforms, and more.

Financial Arithmetic

Basic math skills for business economics students. Contains exponential and logarithmic growth, investment decisions, other applications and more.

Send us an e-mail for full access

info@sowiso.com

Our most common pricing plans

€5.50

Light usage

Per user per year

Minimum amount of users: 250

- The option to create new material using the SOWISO author environment
- A workshop for teachers/authors with continuing support
- Access to the SOWISO authoring community
- Updates and upgrades of the platform
- Technical and functional support
- Integration with LMS of your choice
- Access to the SOWISO courses can be purchased separately for €7,50 p. user, p. year

Heavy usage

For faculties or universities

Up to 100,000 users

- Unlimited access to the SOWISO platform
- Unlimited access to all the SOWISO courses
- Roadmap influence and development credit
- Centralised support
- Workshop(s) for teachers and authors
- And many more benefits!

Contact us for a personalised pricing plan

info@sowiso.com

WHAT USERS SAY ABOUT US

"Nearly 10% of the grade could be explained by the progress in SOWISO. I also noticed that students in SOWISO spend more time on the assignments than previously."

Dr. van Versendaal
University of Amsterdam
The Netherlands

"We have received positive feedback on how it has helped to direct students' study, motivate students to practice, and provide feedback to help students identify weaknesses and misunderstandings."

Dr. Richardson
Edith Cowan University
Australia

"In the 5 years that SOWISO has been part of the strategy of the Foundation Program we have seen results steadily improve from an initial pass rate of 58% prior to its adoption to a pass rate of 87% in the last year, 2018."

Dr. Naidoo
Tshwane University of Technology
South Africa

Actively used by todays leading univesities worldwide

University of Groningen
The Netherlands

University of Western Australia
Australia

University of Southern Denmark
Denmark

Deakin University
Australia

And many more!

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