

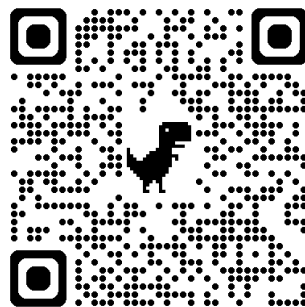
MATHESIS

An Integrated Intelligent Tutoring System for Mathematics

Teacher's Manual

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European School Brussels II



<https://users.sch.gr/dsklavakis/GeoGebra/MATHESIS.htm>

1. Registration

← → ↻ 🏠 users.sch.gr/dsklavakis/GeoGebra/MATHESIS.htm 🔍

MATHESIS - Intelligent GeoGebra Tutoring School

User

Name

Sign In / Sign Up

If you are already registered, enter your Username and Password and click the 'Sign In' button.

Username

Password

Sign In

Cancel

If you are not registered, enter your data and click the 'Sign Up' button.

Username

dmteach1

Password

....

Repeat Password

....

Fullname

Demo Teacher 1

Property

Teacher ▾

Sign Up

Cancel

2. Sign In

← → ↻ 🏠 users.sch.gr/dsklavakis/GeoGebra/MATHESIS.htm 🔍

MATHESIS - Intelligent GeoGebra Tutoring School

User

Name

Sign In / Sign Up

If you are already registered, enter your Username and Password and click the 'Sign In' button.

Username

dmteach1

Password

....

Sign In

Cancel

If you are not registered, enter your data and click the 'Sign Up' button.

Username

Password

Repeat Password

Fullname

Property

Student ▾

Sign Up

Cancel

← → ↻ 🏠 users.sch.gr/dsklavakis/GeoGebra/MATHESIS.htm 🔍

MATHESIS - Intelligent GeoGebra Tutoring School

[Classes](#)

[Booklets](#)

[Exercises Assignment](#)

[Check Student Exercises](#)

Student

User

dmteach1

Name

Demo Teacher 1

MATHESIS - Classes Management

Open

Create

Save

Close

3. Class creation

- 3.1 Click the *Create* Button
- 3.2 Enter the School and School Year, Grade and Class
- 3.3 Type the student's Username and click the *Add Student* button
- 3.4 Repeat step 3.3 for each student you want to add
- 3.5 Click the *Save* and *Close* buttons

MATHEISIS - Classes Management

School	Grade	Class
EEB2 2023-2024	S6	S6 MA5 Test

with Username:

MATHEISIS - Classes Management

School	Grade	Class
EEB2 2023-2024	S6	S6 MA5 Test

☐ 1

with Username:

MATHEISIS - Classes Management

School	Grade	Class
EEB2 2023-2024	S6	S6 MA5 Test

☐ 1

☐ 2

with Username:

4. Class management

4.1 Click the *Open* button

4.2 Select your class from the drop-down list

MATHESIS - Classes Management

Select Class

Select Class

EEB2 2023-2024-S6-S6 MA5 Test

4.3 To Add a student see 3.3

4.4 To Delete one or more students, check the boxes in front of their names and click the *Delete Selected Student* button

MATHESIS - Classes Management

School	Grade	Class
EEB2 2023-2024	S6	S6 MA5 Test

	SN	Username	Fullname
<input type="checkbox"/>	1	student1	Test student 1
<input type="checkbox"/>	2	student2	Test student 2
<input checked="" type="checkbox"/>	3	student3	Test student 3

with Username:

MATHESIS - Classes Management

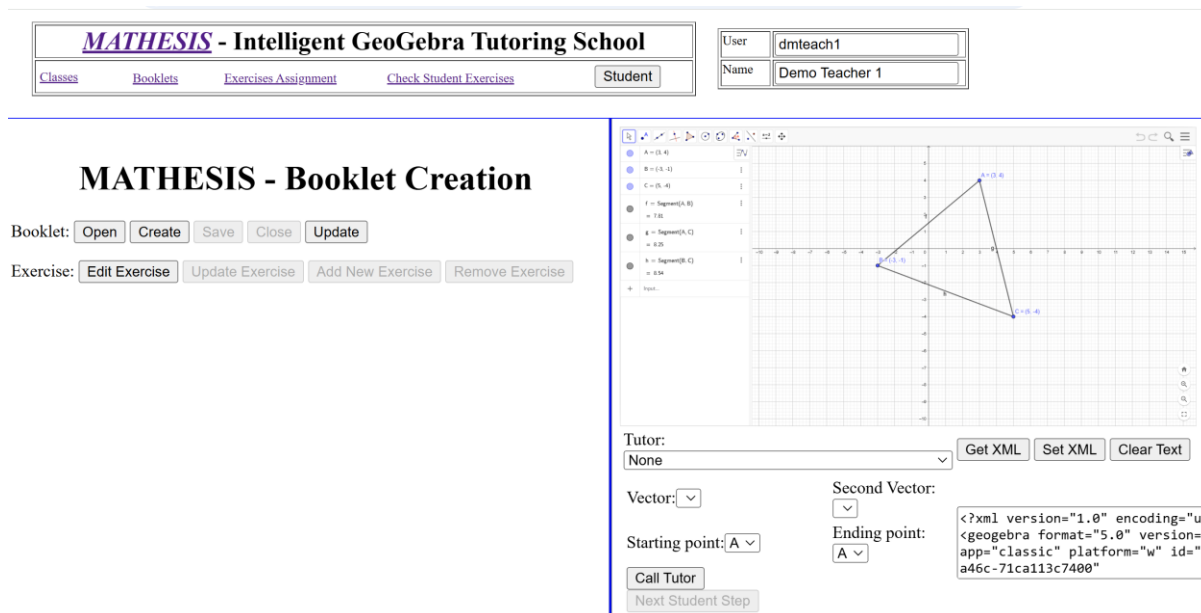
School	Grade	Class
EEB2 2023-2024	S6	S6 MA5 Test

	SN	Username	Fullname
<input type="checkbox"/>	1	student1	Test student 1
<input type="checkbox"/>	2	student2	Test student 2

with Username:

5. Booklet creation

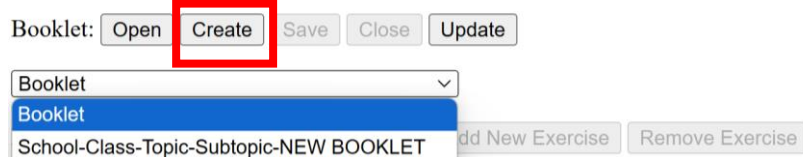
5.1 Click on the *Booklets* link



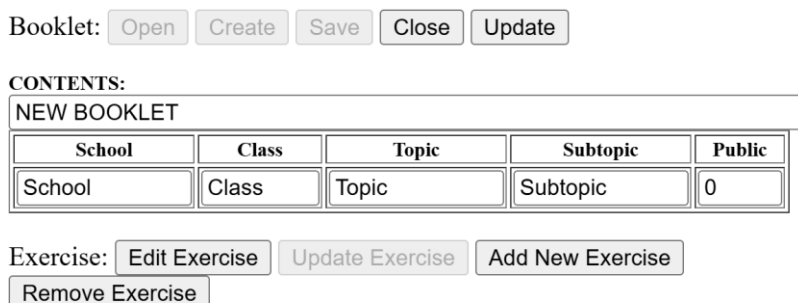
5.2 Click the *Create* button

5.3 Select the newly created Booklet from the drop-down list

MATHESIS - Booklet Creation



MATHESIS - Booklet Creation



- 5.4 Enter the CONTENTS description, School, Class, Topic, Subtopic. Leave Public 0

MATHESIS - Booklet Creation

Booklet:

CONTENTS:

Test Booklet: Vector coordinates, Midpoints, Length, Distance, Parallel vectors

School	Class	Topic	Subtopic	Public
EEB2 2023-24	S6	Geometry	2-D Vectors	0

Exercise:

- 5.5 Click button *Add New Exercise*
- 5.6 Check the box next to the exercise number and click the *Edit Exercise* button
- 5.7 Enter the Topic and Subtopic description as well as the text of the exercise

MATHESIS - Booklet Creation

Booklet:

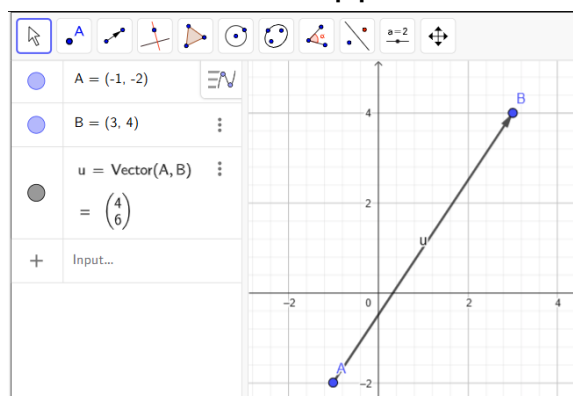
CONTENTS: Test Booklet: Vector coordinates, Midpoints, Length, Distance, Parallel vectors

School	Class	Topic	Subtopic	Public
EEB2 2023-24	S6	Geometry	2-D Vectors	0

Exercise:

1. <input checked="" type="checkbox"/>	Topic: Geometry	Subtopic: 2-D Vectors - Vector Coordinates
<div>Find the coordinates of vector with start A(-1,-2) and B(3,4)</div>		

- 5.8 Enter the construction elements, points A(-1,-2) and B(3,4) in the GeoGebra applet on the right



- 5.9 Click the *Update Exercise* button
- 5.10 Repeat steps 5.5 - 5.9 for each new exercise
- 5.11 When you finish, click the *Save and Close* buttons.

6. Exercises Assignment

- 6.1 Click the *Exercises Assignment* link

MATHEsis - Intelligent GeoGebra Tutoring School

[Classes](#)
[Booklets](#)
[Exercises Assignment](#)
[Check Student Exercises](#)
[Student](#)

MATHEsis - Exercises Assignment

Date

Test Paper:
Exercises :

Class:
Students:

- 6.2 Click the Test Paper: *Open* button

- 6.3 Select the Booklet you want from the drop-down list

MATHEsis - Exercises Assignment

Date

Test Paper:
Exercises :

Booklet

School-Class-Topic-Subtopic-NEW BOOKLET

MATHEsis - Exercises Assignment

Date

Test Paper:
Exercises :

CONTENTS:

Test Booklet: Vector coordinates, Midpoints, Length, Distance, Parallel vectors

School	Class	Topic	Subtopic	Public
EEB2 2023-24	S6	Geometry	2-D Vectors	0

1. ☐

Topic:
Subtopic:

Find the coordinates of vector with start A(-1,-2) and end B(3,4)

Class:
Students:

6.4 Click the Class: *Open* button

6.5 Select the Class you want from the drop-down list

MATHESIS - Exercises Assignment

Assign Exercises

Date3-11-2024

Test Paper:

Open

Close

Exercises :

Select

Clear

CONTENTS:

Test Booklet: Vector coordinates, Midpoints, Length, Distance, Parallel vectors

School	Class	Topic	Subtopic	Public
EEB2 2023-24	S6	Geometry	2-D Vectors	0

1.

Topic:Geometry

Subtopic:2-D Vectors - Vector Coordinates

Find the coordinates of vector with start A(-1,-2) and end B(3,4)

Class:

Open

Close

Students:

Select

Clear

Select Class

Select Class

EEB2 2023-2024-S6-S6 MA5 Test

MATHESIS - Exercises Assignment

Assign Exercises

Date3-11-2024

Test Paper:

Open

Close

Exercises :

Select

Clear

CONTENTS:

Test Booklet: Vector coordinates, Midpoints, Length, Distance, Parallel vectors

School	Class	Topic	Subtopic	Public
EEB2 2023-24	S6	Geometry	2-D Vectors	0

1.

Topic:Geometry

Subtopic:2-D Vectors - Vector Coordinates

Find the coordinates of vector with start A(-1,-2) and end B(3,4)

Class:

Open

Close

Students:

Select

Clear

School	Grade	Class
EEB2 2023-2024	S6	S6 MA5 Test

SN	Username	Fullname
<input type="checkbox"/> 1	student1	Test student 1
<input type="checkbox"/> 2	student2	Test student 2

6.6 Select the exercises you want to assign and the students you want to assign them to, by ticking the boxes next to their serial numbers

MATHEISIS - Exercises Assignment

 Date

Test Paper: Exercises :

CONTENTS:

Test Booklet: Vector coordinates, Midpoints, Length, Distance, Parallel vectors

School	Class	Topic	Subtopic	Public
EEB2 2023-24	S6	Geometry	2-D Vectors	0

1. ☒

Topic: **Subtopic:**

Find the coordinates of vector with start A(-1,-2) and end B(3,4)

Class: Students:

School		Grade	Class
EEB2 2023-2024		S6	S6 MA5 Test

	SN	Username	Fullname
<input checked="" type="checkbox"/>	1	student1	Test student 1
<input checked="" type="checkbox"/>	2	student2	Test student 2

6.7 Click the *Assign Exercises* button at the top of the Test Paper

MATHEISIS - Intelligent GeoGebra Tutoring School

[Classes](#)[Booklets](#)[Exercises Assignment](#)[Check Student Exercises](#)

MATHEISIS - Exercises Assignment

 Date

Test Paper: Exercises :

- 6.8 Repeat steps 6.6 and 6.7 to assign different exercises to different students. You can use the Exercises: *Select/Clear* and Students: *Select/Clear* buttons to select/deselect all Exercises/Students.

7. Assessment

- 7.1 Click the *Check Student Exercises* link

<u>MATHESIS</u> - Intelligent GeoGebra Tutoring School				
Classes	Booklets	Exercises Assignment	Check Student Exercises	<input type="button" value="Student"/>

- 7.2 Set the *From* and *To* dates. The system by default selects the past 15 days from the current date.

Solved Exercises

Exercises		
from	19	/ 10 / 2024
to	3	/ 11 / 2024

- 7.3 Click the *Classes* button and select the *Class* you want from the drop-down list

Solved Exercises

Exercises		
from	19	/ 8 / 2024
to	3	/ 11 / 2024
Classes	Close	
EEB2-S5-S5 MA4 ENA		▼

7.4 Select a Student form the drop-down list

Solved Exercises

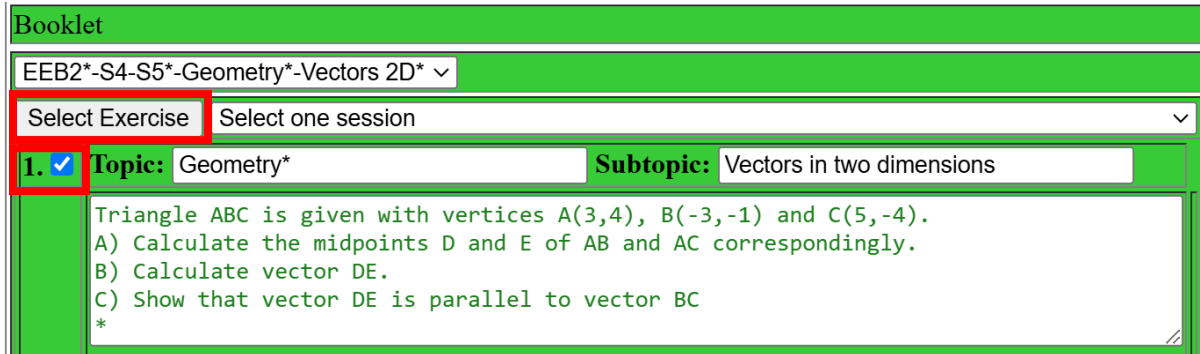
Exercises		
from	19	/ 8 / 2024
to	3	/ 11 / 2024
Classes Close		
EEB2-S5-S5 MA4 ENA		
Students		
3. Maria (fontanmr)		

7.5 Select a Booklet from the drop-down list. The exercises assigned from the Booklet appear below. Exercises with attempted solutions appear in green text, while these with no attempted solutions, appear in red text.

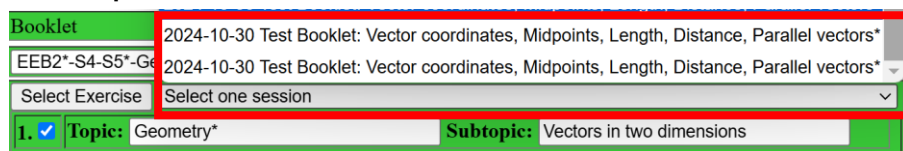
Solved Exercises

Exercises		
from	19	/ 8 / 2024
to	3	/ 11 / 2024
Classes Close		
EEB2-S5-S5 MA4 ENA		
Students		
3. Maria (fontanmr)		
Booklet		
EEB2*-S4-S5*-Geometry*-Vectors 2D*		
Select Exercise		
1. <input type="checkbox"/>	Topic: Geometry*	Subtopic: Vectors in two dimensions
	Triangle ABC is given with vertices A(3,4), B(-3,-1) and C(5,-4). A) Calculate the midpoints D and E of AB and AC correspondingly. B) Calculate vector DE. C) Show that vector DE is parallel to vector BC *	
2. <input type="checkbox"/>	Topic: Geometry	Subtopic: Vectors 2D
	A quadrilateral ABCD is given with vertices A(-5,2), B(1,4), C(6,2) and D(-6,-2). A) Calculate the midpoints K and L of AD and BC correspondingly. B) Calculate vector KL. C) Show that vectors KL, AB and DC are parallel.	
3. <input type="checkbox"/>	Topic: Geometry	Subtopic: Vectors 2D
	Show that vectors $u=(2,5)$ and $v=(-4,-10)$ are parallel	

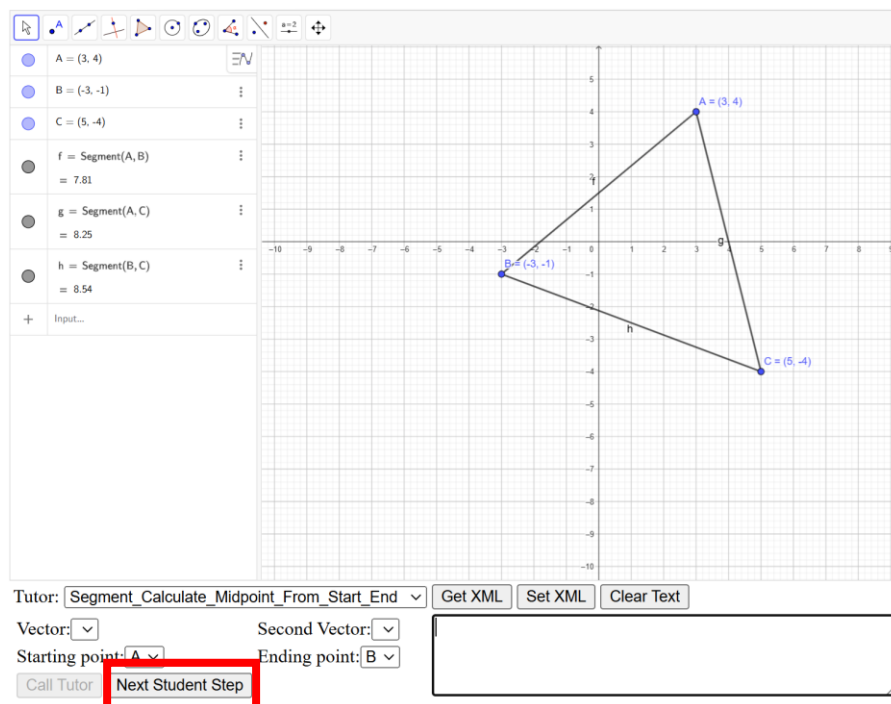
- 7.6 To inspect the solution steps of an exercise, tick the box next to its serial number and click the *Select Exercise* button. The construction of the exercise appears in the GeoGebra applet on the right.



- 7.7 Select one of the solution attempts (sessions) from the drop-down list



- 7.8 To inspect the solution steps, click repeatedly the *Next Student Step* button located below the GeoGebra applet on the right hand side of the page



8. Competence Statistics

8.1 Select a Competence (skill) from the drop-down list.

Next to each competence, the ratio of successful performances over the total number of performances appear.

Select a skill

Line_Calculate_Equation_From_Two_Points: 28/61 = 45%

Segment_Calculate_Length_From_Start_End: 4/11 = 36%

Segment_Calculate_Midpoint_From_Start_End: 5/9 = 55%

Vector_Calculate_Coordinates_From_Start_End: 3/6 = 50%

Vector_Calculate_Length_From_Coordinates: 5/13 = 38%

Vector_Investigate_Parallel_To_Vector: 14/21 = 66%

Select a skill
▼

8.2 When you select a specific performance, a table of all the attempted performances is displayed.

Statistics				
Line_Calculate_Equation_From_Two_Points: 28/61 = 45% ▼				
SN	Given	Answer	Correct	Date
45	A(3, 4), C(5, -4)	Slope a= 1	0	2024-10-27
46	A(3, 4), C(5, -4)	Slope a= (-4 - 4)/(3 - 5)=1	0	2024-10-27
47	A(3, 4), C(5, -4)	Slope a= (-4 - 4)/(5 - 3)=-4	1	2024-10-27
48	A(3, 4), C(5, -4)	Slope a= -4	1	2024-10-27
49	A(3, 4), C(5, -4), 4 = -4 * 3 + b	Y-intercept b= 0	0	2024-10-27
50	A(3, 4), C(5, -4), 4 = -4 * 3 + b	4 = -4 * 3 + 16	1	2024-10-27
51	A(3, 4), C(5, -4)	Slope a= -4	1	2024-10-29
52	A(3, 4), C(5, -4), 4 = -4 * 3 + b	Y-intercept b= 16	1	2024-10-29
53	A(3, 4), C(5, -4)	Slope a= 4	0	2024-10-29
54	A(3, 4), C(5, -4)	Slope a= (4 - 4)/(5 - 3)=4	0	2024-10-29
55	A(3, 4), C(5, -4)	Slope a= (-4 - 4)/(5 - 3)=-4	0	2024-10-29
56	A(3, 4), C(5, -4)	Slope a= (-4 - 4)/(5 - 3)= -4	1	2024-10-29
57	A(3, 4), C(5, -4), 4 = -4 * 3 + b	Y-intercept b= 0	0	2024-10-29
58	A(3, 4), C(5, -4), 4 = -4 * 3 + b	4 = -4 * 4 + 0	0	2024-10-29
59	A(3, 4), C(5, -4), 4 = -4 * 3 + b	4 = -4 * 3 + 0	0	2024-10-29
60	A(3, 4), C(5, -4), 4 = -4 * 3 + b	4 = -4 * 3 + 12	0	2024-10-29
61	A(3, 4), C(5, -4), 4 = -4 * 3 + b	4 = -4 * 3 + 16	1	2024-10-29