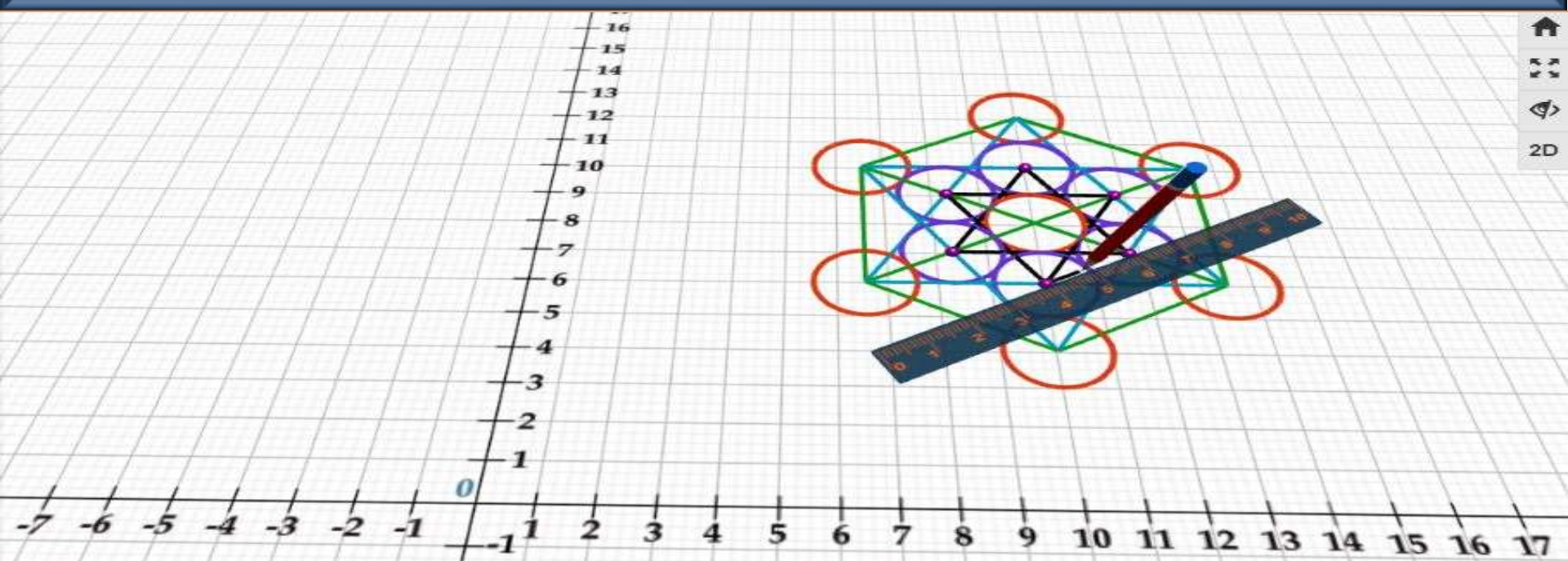




USER GUIDE



Geometric Constructions Made Easy

CONTENTS

“Teach and learn geometry exactly as you would with a physical straightedge, compass, and protractor”.

Getting started with RoboCompass	3
Menu Bar	4
Command Editor	8
Play Surface	10
Supported Commands	12
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GETTING STARTED WITH ROBOCOMPASS

MENU BAR

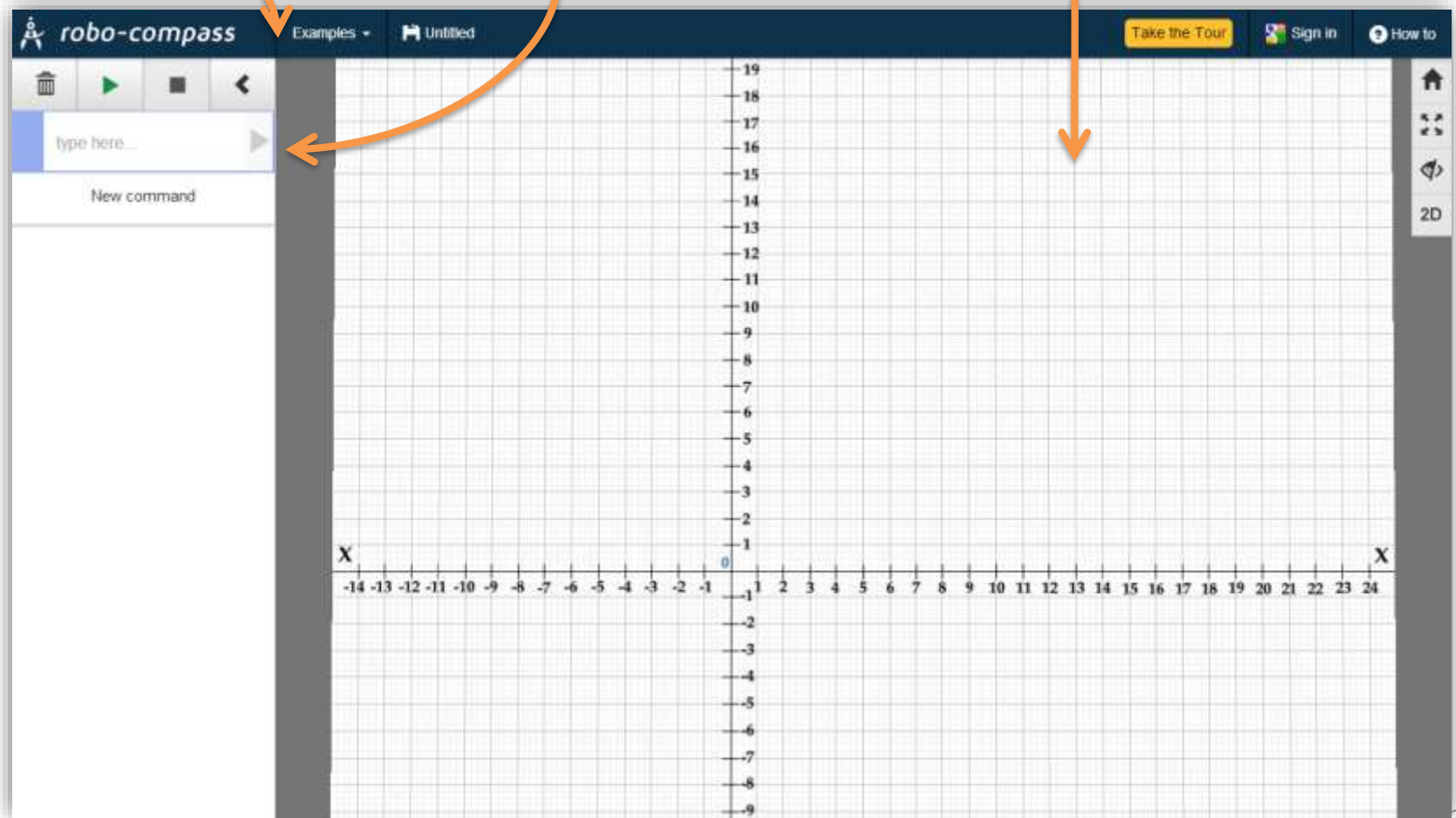
Located at the top of the Application

COMMAND EDITOR

Enter command or text to build a geometry construction.

PLAY SURFACE

Area where the geometry constructions is viewed or manipulated.



MENU BAR

The diagram illustrates the RoboCompass menu bar and its dropdown menus. The menu bar includes the RoboCompass logo, 'Examples', 'Untitled', 'Take the Tour', 'Sign in', and 'How to'.

Examples Menu: A dropdown list of example worksheets is shown, including 'Copy a line segment', 'An Equilateral Triangle', 'Bisect an angle', 'Square', 'Metatron's Cube', 'Tangent line on a Circle', 'Geometric Art Pattern', 'Calculate An Angle', and 'Text Using Compass'.

Annotations:


- Untitled:** Select the *Untitled* menu to save a worksheet.
Hint: Sign into RoboCompass using a Gmail account before saving a worksheet.
- Examples:** When the *Example* menu is selected, a dropdown list of example worksheets will display.
Hint: All example worksheets can be modified.
- Take the Tour:** To watch the RoboCompass demo click the *Take the Tour* button.
- Sign in:** Select the *Sign In* button to sign into your Gmail account.
- How to:** Select *How to* for a list of supported commands.

GOOGLE DRIVE ACCOUNT SIGN IN

 Untitled

1. To save your work click the Untitled button. The *Save* dialogue box will open.

2. Type a title and description then click the *Save Robo* Button


 Save ✕

Title:

Description:

Save Robo

3. Worksheets are saved to Google Drive. Use Google Drive to easily share completed worksheets with groups or friends.

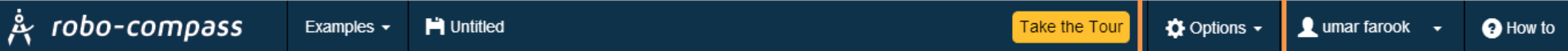
 Save ✕

Title:

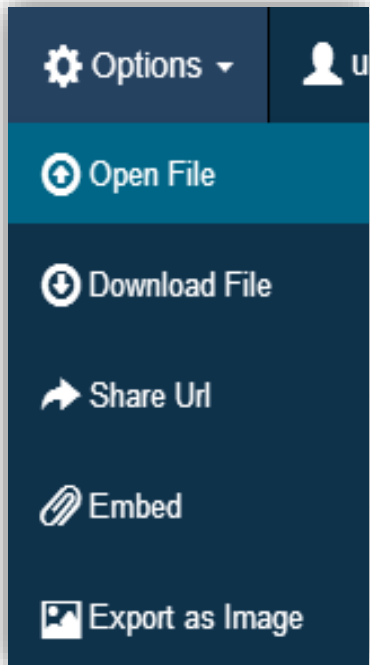
Description:

✓ saved successfully. ➔ Share Save Robo

OPTIONS AND USER NAME MENUS



After users sign-in, two additional menu items appear on the menu bar.



Options Menu: Dropdown menu for file management commands.

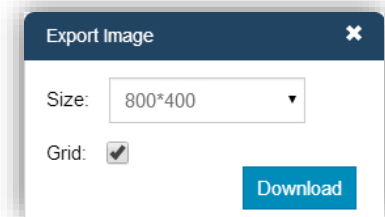
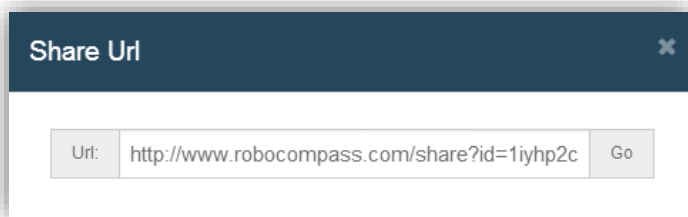
Open File: Open a saved RoboCompass file from the local drive.

Download File: Download or save worksheets onto the local drive.

Share URL: Generate a link to a worksheet for easy sharing.

Embed: Embed worksheets with embed codes.

Export Image: Export a worksheet as an Image .



OPTIONS AND USER NAME MENUS



robo-compass

Examples ▾

📁 Untitled

Take the Tour

⚙ Options ▾

👤 umar farook ▾

🔗 How to

👤 umar farook ▾

☰ My Files

User Name Menu: When the user name is selected, the *My Files* dropdown menu displays. In the My Files dialogue box saved files can be deleted or opened.

☰ My Files



« 1 2 3 4 5 »

File Name

Description

Delete

Open

🔗 Acute Triangle

Acute Triangle

Delete

Open

🔗 CommonInternalTangent

CommonInternalTangent

Delete

Open

🔗 CommonExternalTangent

CommonExternalTangent

Delete

Open

🔗 Center of Circle

Center of Circle

Delete

Open

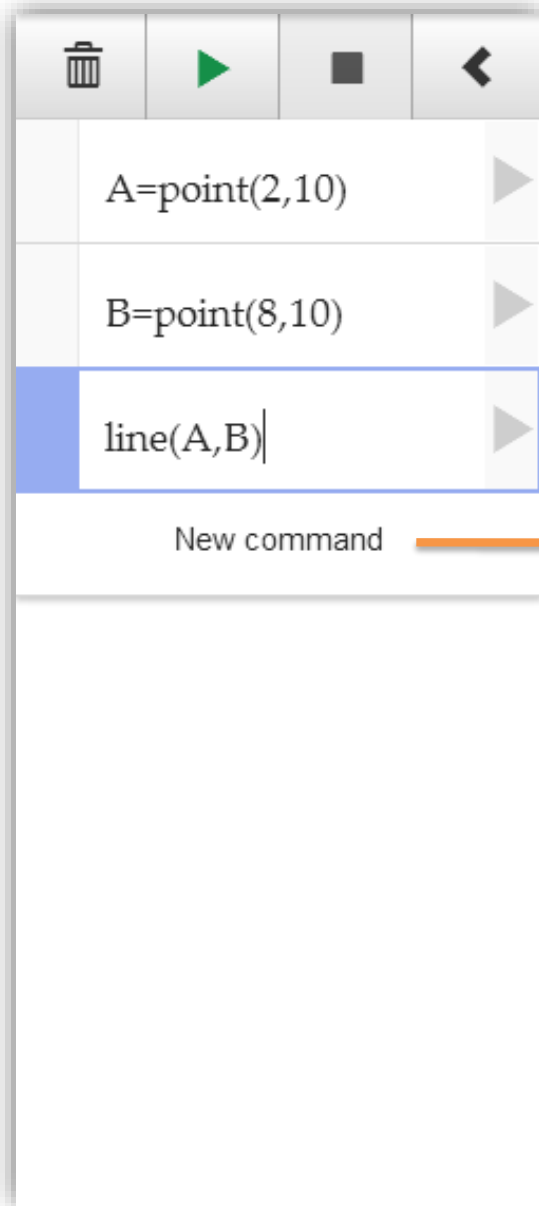
🔗 Tangent Off Conic

Tangent Off Conic

Delete

Open

COMMAND EDITOR



The main Command Editor interface features a toolbar at the top with four icons: a trash can, a green play button, a black square, and a left-pointing arrow. Below the toolbar is a list of commands. The first two are "A=point(2,10)" and "B=point(8,10)". The third, "line(A,B)", is highlighted with a blue background. Below this list is a text input field labeled "New command".



Delete All

Play All

Stop

Hide Command Editor

Select "New Command" to add a new command item.

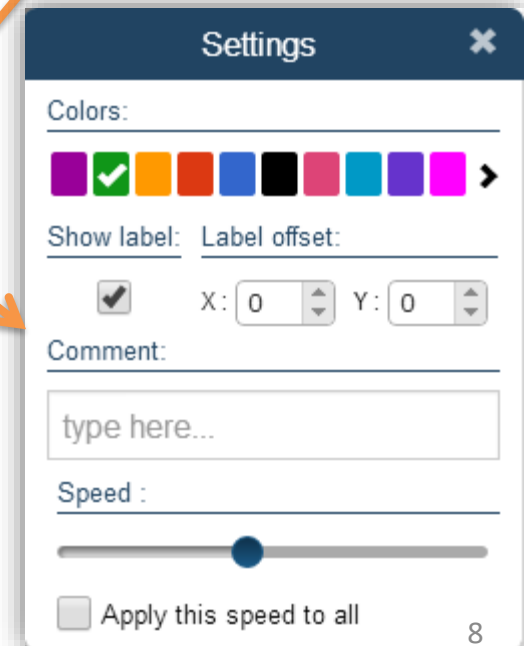
Individual delete

Individual Play

line(A,B)

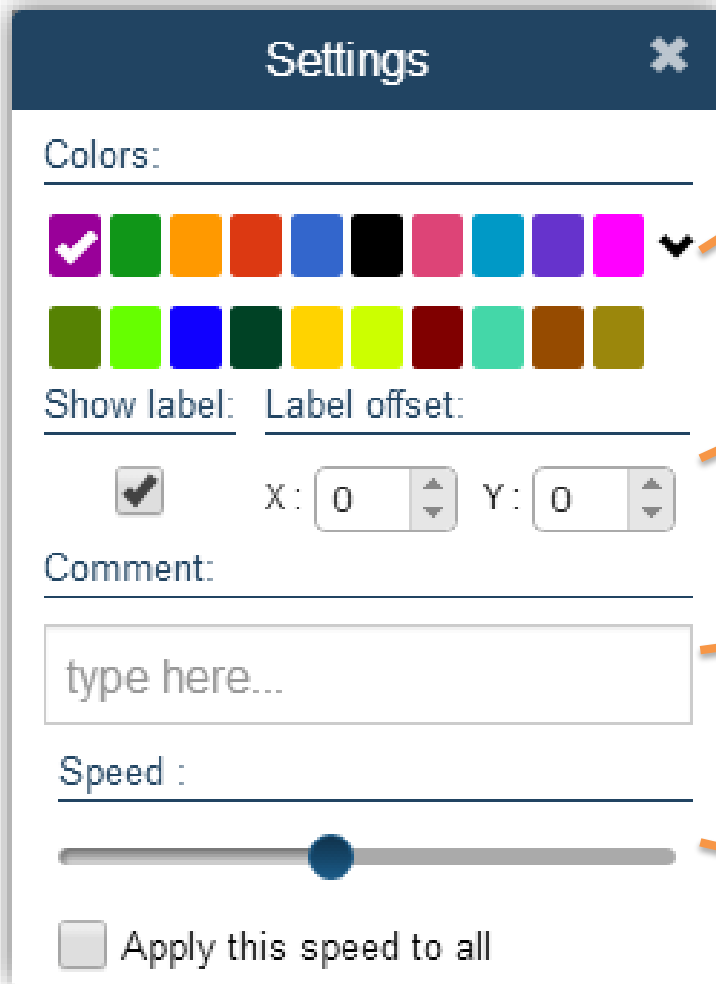
In the settings panel control options for:

- Play speed
- Color
- Label objects



The Settings panel is titled "Settings" and includes a close button (X). It contains several sections: "Colors" with a row of color swatches (purple, green, orange, red, blue, black, pink, cyan, magenta) and a right arrow; "Show label:" with a checked checkbox; "Label offset:" with X and Y coordinates set to 0; "Comment:" with a text input field containing "type here..."; "Speed:" with a horizontal slider; and a checkbox labeled "Apply this speed to all".

COMMAND EDITOR – SETTINGS



The screenshot shows the 'Settings' window of the Command Editor. It has a dark blue header with the title 'Settings' and a close button. The main area is white and contains several sections: 'Colors' with two rows of color swatches and a dropdown arrow; 'Show label' with a checked checkbox; 'Label offset' with X and Y stepper controls; 'Comment' with a text input field containing 'type here...'; 'Speed' with a slider and a checkbox labeled 'Apply this speed to all'. Four orange callout arrows point from text boxes on the right to specific elements: the first points to the color swatches, the second to the 'Show label' checkbox, the third to the 'Comment' text box, and the fourth to the 'Speed' slider.

Settings

Colors:

✓ [Color Swatches] ▼

Show label: ☒ Label offset: X: 0 Y: 0

Comment: type here...

Speed : [Slider]

☐ Apply this speed to all

Colors Panel: Change an object's color.

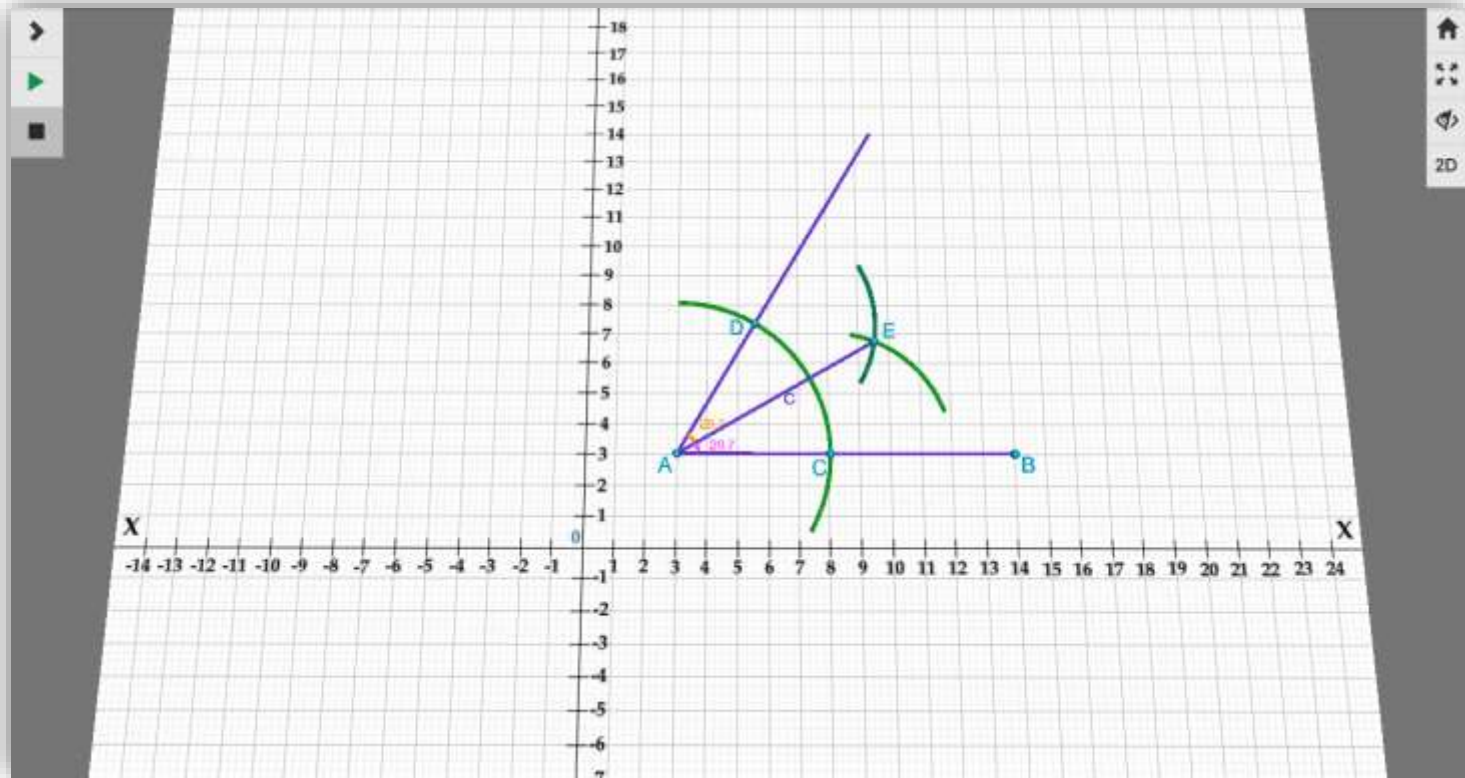
Show Label box: To hide a label, *uncheck*, the show label box. To position labels use the stepper options X and Y.

Comment box: Enter text to display comments with a particular object.

Speed Slider: Adjust the play speed for an individual command. Check, *Apply this speed to all*, to apply the same speed to all commands.

PLAY SURFACE

Play Surface: View the geometry output of entered commands in the command editor. The straightedge, setsquare, compass, protractor, and pencil graphics simulate the steps of the geometry construction for the corresponding commands.



Show Command Editor



Full Screen/ Exit

2D

2D/3D View

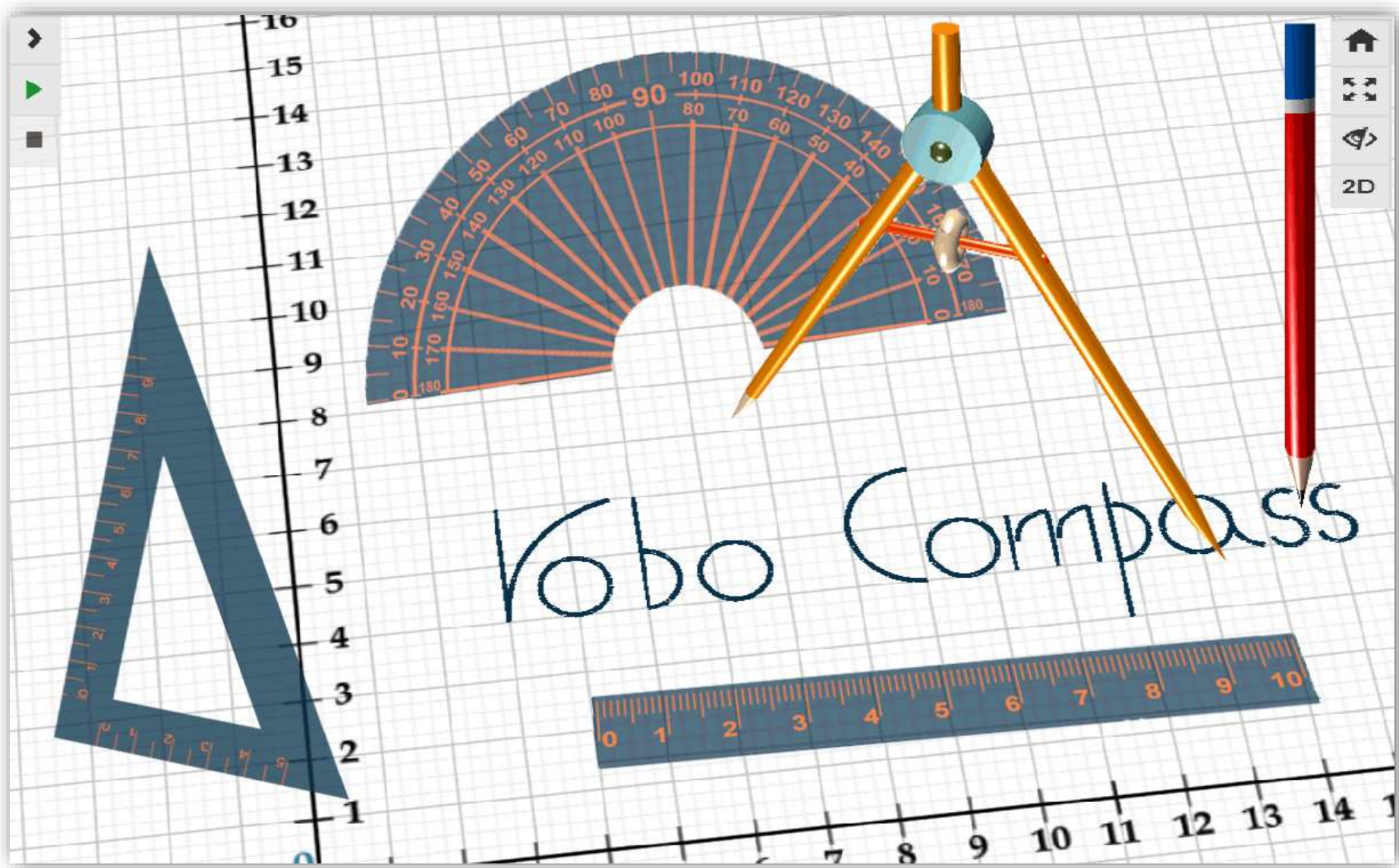


Reset View



Hide Grid/ Show Grid

ROBO GEOMETRY INSTRUMENTS



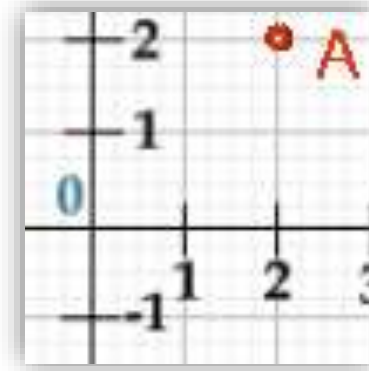
SUPPORTED COMMANDS

point(x,y)

point(0,0)

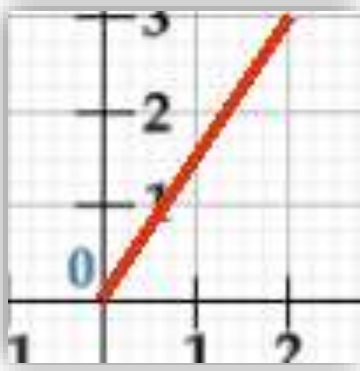


A=point(2,2)

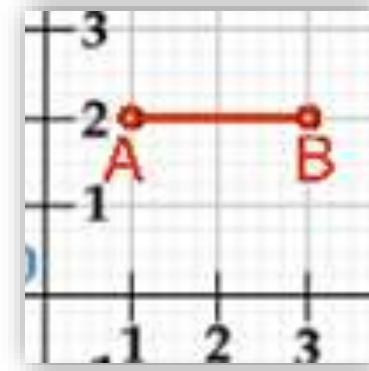


line(x1,y1,x2,y2)

line(0,0,2,3)



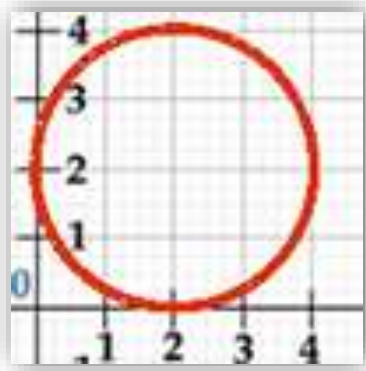
line(A,B)



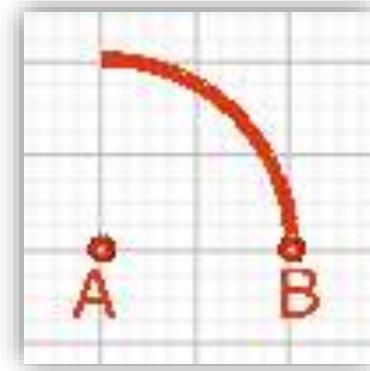
SUPPORTED COMMANDS

arc(originPoint, radius, angleFrom, upto)

arc(point(2,2),3,0,360)

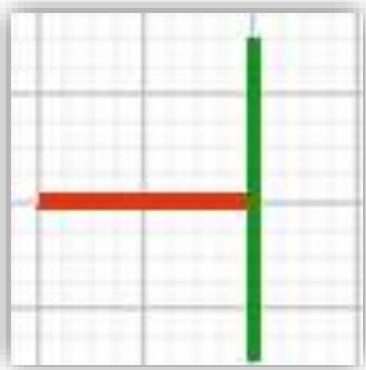


arc(A,B,A, 0,90)

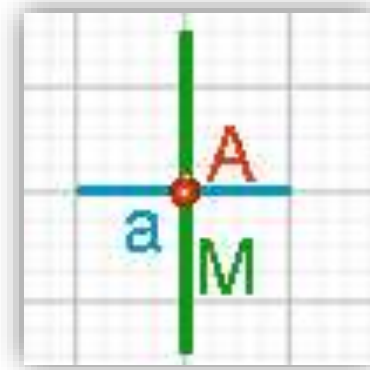


perp(line, passThroughPoint, length=10)

perp(line(1,2,3,2),point(3,2))



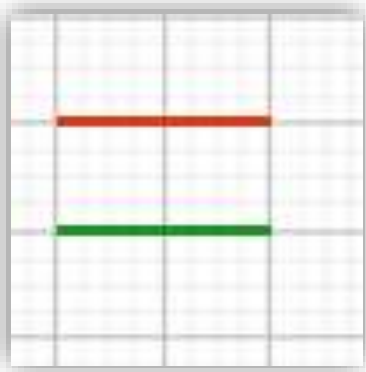
M=perp(a, A)



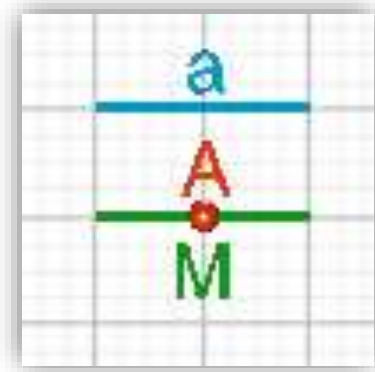
SUPPORTED COMMANDS

parallel(line, passThroughPoint, length=10)

parallel(line(2,3,4,3),point(3,2))

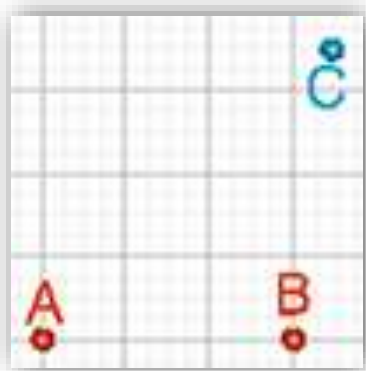


M=parallel(a, A)

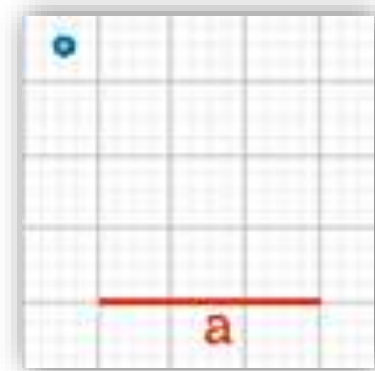


angle(point1, point2, degrees)

C=angle(A,B,45)



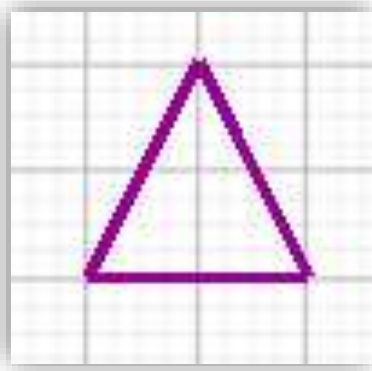
angle(a,45,1)



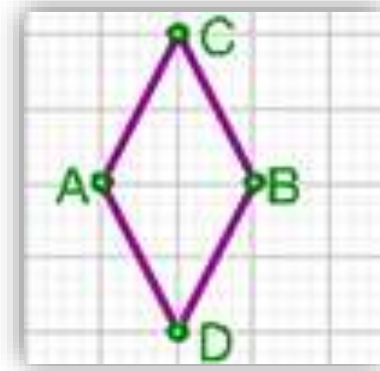
SUPPORTED COMMANDS

polygon(comma separated points)

polygon(point(2,2),point(4,2),point(3,4))

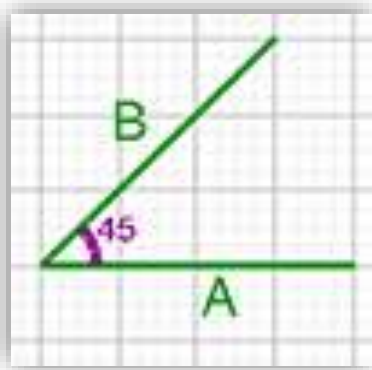


M=polygon(A,B,C,D)

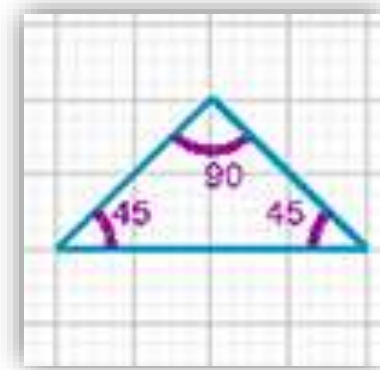


findangle(2 lines or a polygon)

findangle(A,B)



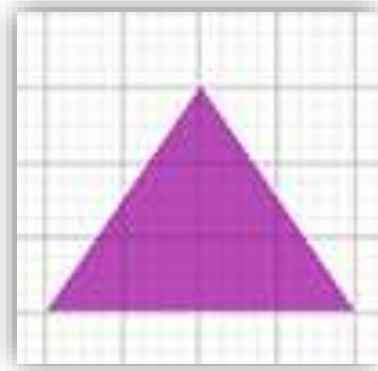
findangle(C)



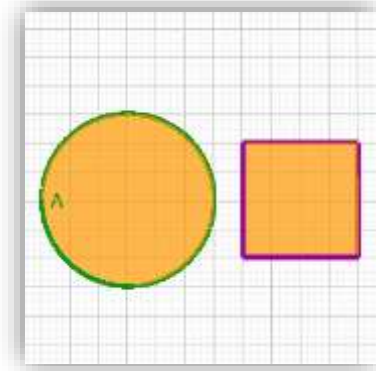
SUPPORTED COMMANDS

fill(A, B, fillType=0, output=1)

fill(polygon(2,2,6,2,4,5))

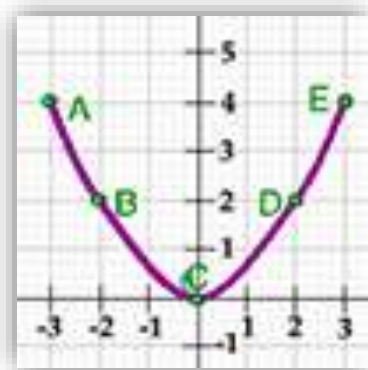


fill(A,B)

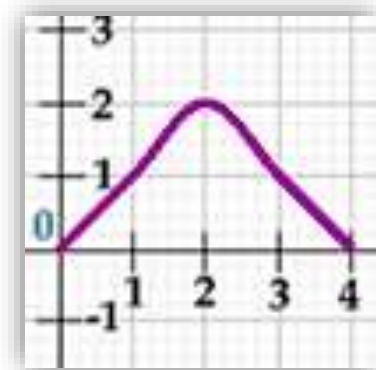


trace(comma separated points)

trace(A,B,C,D,E)



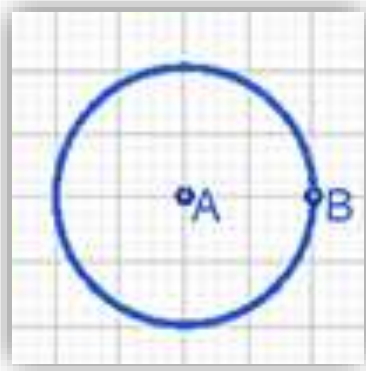
trace(point(0,0),point(1,1),point(2,2),point(3,1),point(4,0))



SUPPORTED COMMANDS

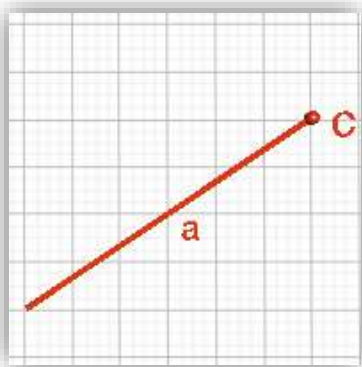
dist(point1, point2)

arc(A, dist(A,B),0,360)

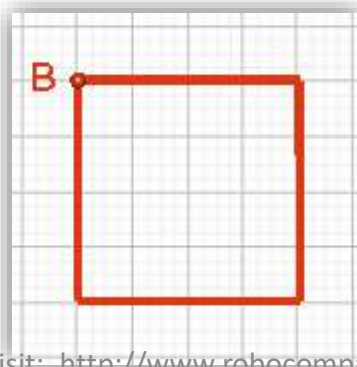


pos(polygon or line or arc, index)

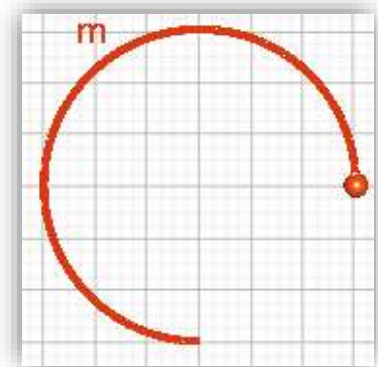
C=point(pos(a,2))



B=point(pos(A,4))



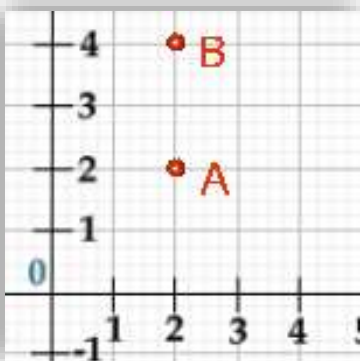
point(pos(m,2))



SUPPORTED COMMANDS

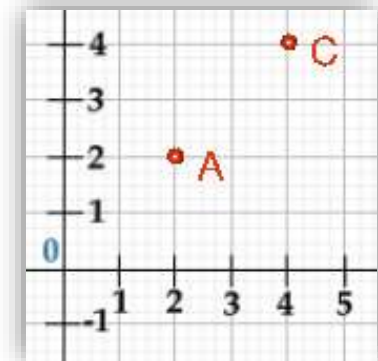
X(point)

$B = \text{point}(X(A), 4)$



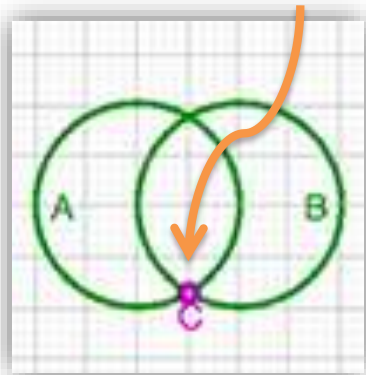
Y(point)

$C = \text{point}(X(A)+2, Y(A)+2)$

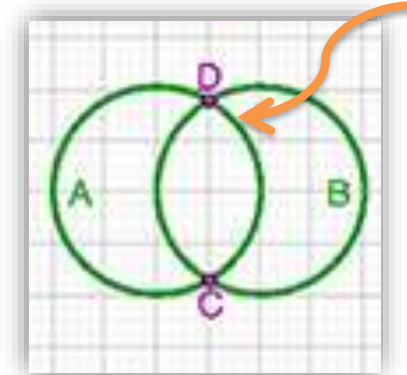


intersect(object1, object2, index=1)

$C = \text{point}(\text{intersect}(A, B))$



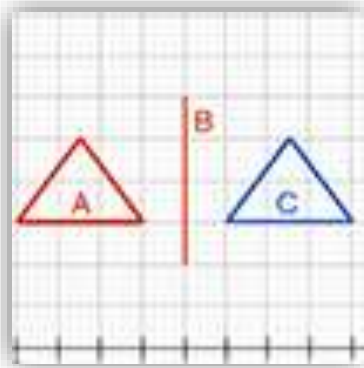
$D = \text{point}(\text{intersect}(A, B, 2))$



SUPPORTED COMMANDS

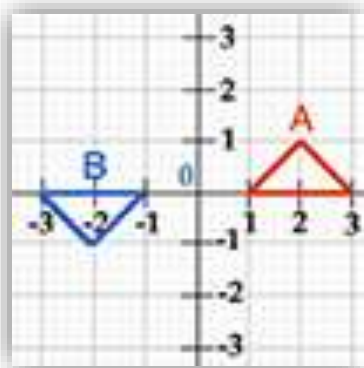
reflect(object, line)

C=reflect(A,B)



rotate(object, angle, withrespectTo = point (0,0))

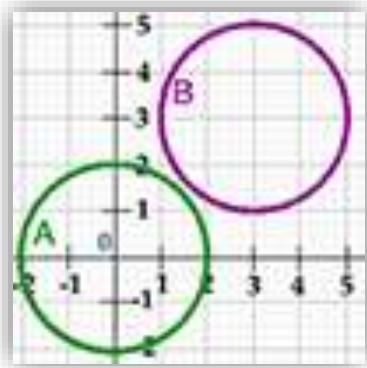
B=rotate(A,180)



SUPPORTED COMMANDS

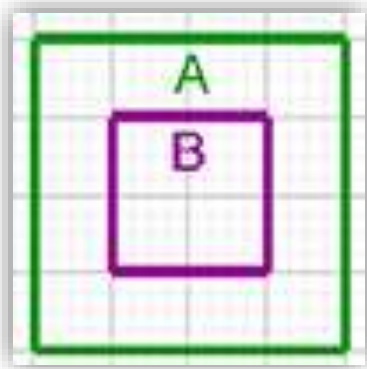
translate(object, x, y, withrespectTo = point(0,0))

B=translate(A,3,3)

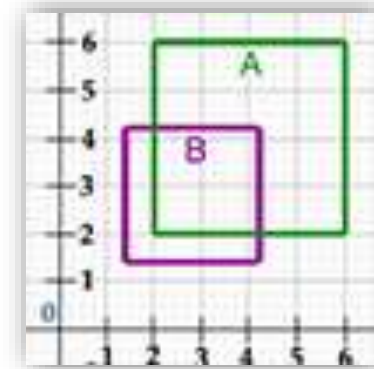


dilate(object, scaleFactor, withRespectTo = point(0,0))

B=dilate(A,0.5,point(4,4))



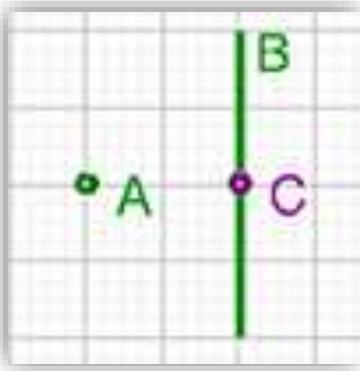
B=dilate(A,0.7)



SUPPORTED COMMANDS

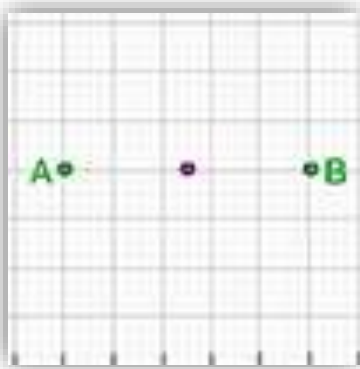
project(point1,line)

C=point(project(A,B))

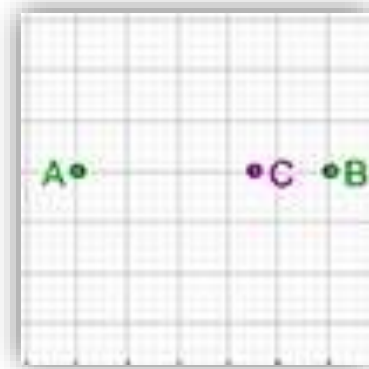


interpolate(point1, point2, ratio)

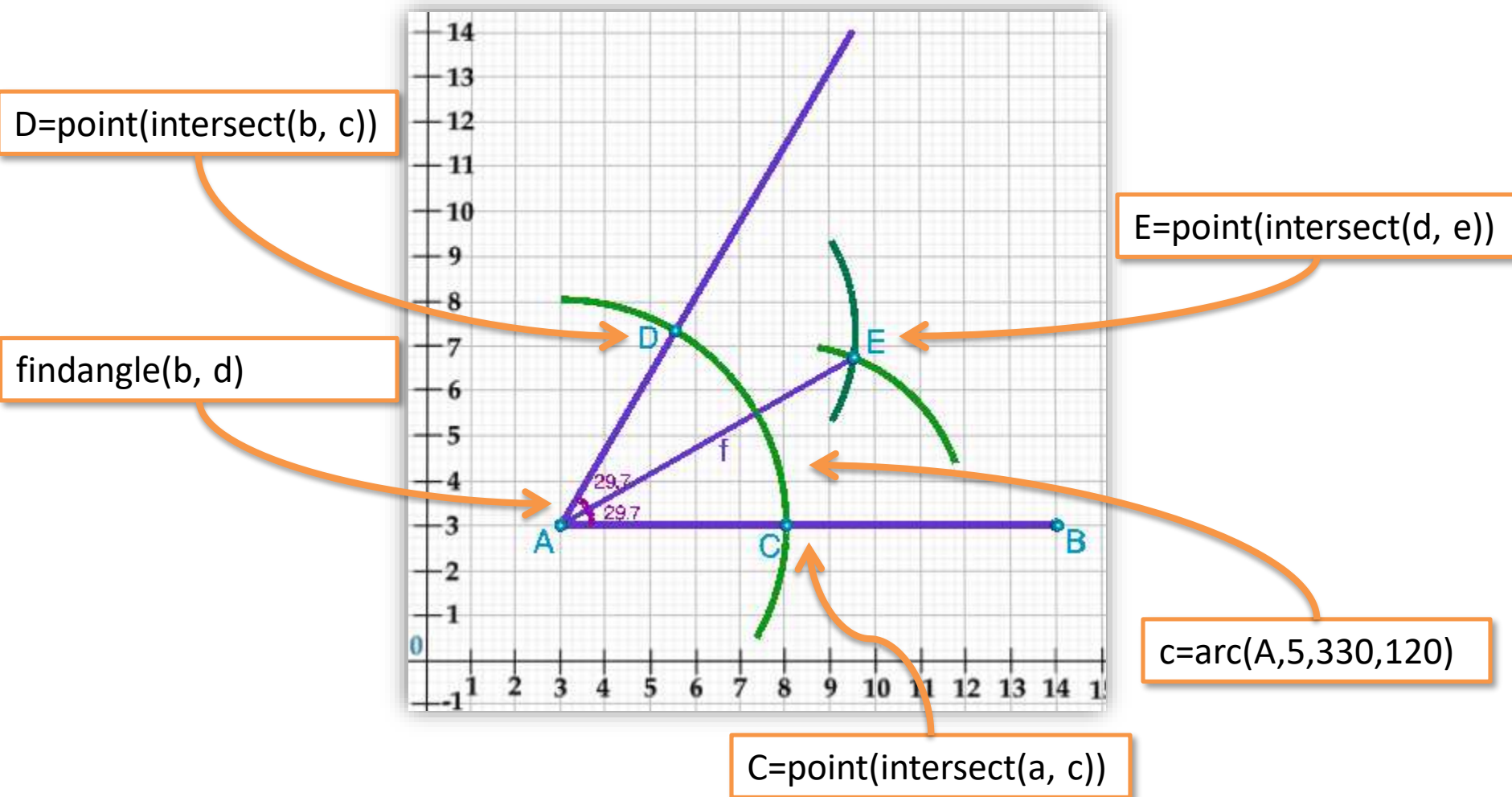
point(interpolate(A,B,0.5))



C=point(interpolate(A,B,0.7))



EXAMPLE: ANGLE BISECTOR



*Note: The simple commands for points and lines are not shown in this example.

THANK YOU FOR USING ROBOCOMPASS!

- Free sign-up: <https://www.robocompass.com>
- Facebook: <https://www.facebook.com/robocompass.org>
- Twitter: <https://twitter.com/robocompass>
- YouTube: <https://www.youtube.com/robocompass>