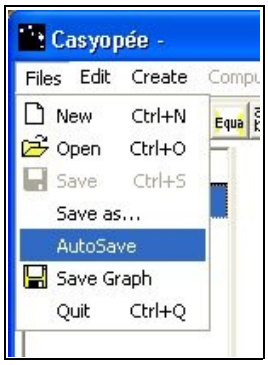
Worksheet 1

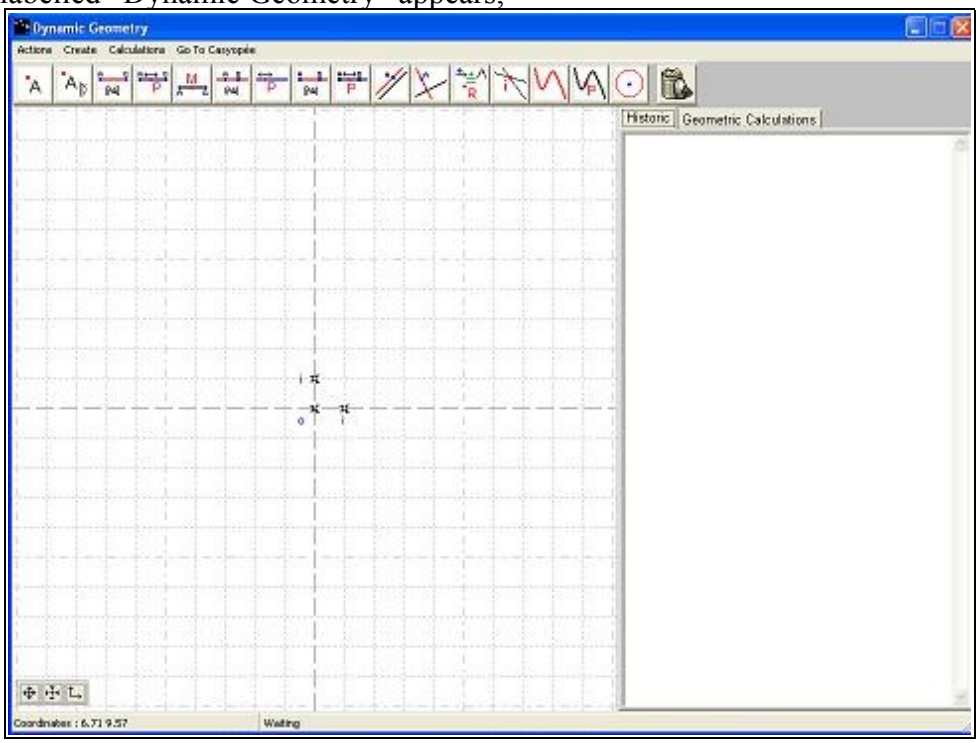
To start Casyopée double-click on the corresponding Desktop icon

Click on the menu "Files" of Casyopée tool-bar, then select "AutoSave", label your file as follow "name1_name2_1" (name1 and name2 are your own names) and save.



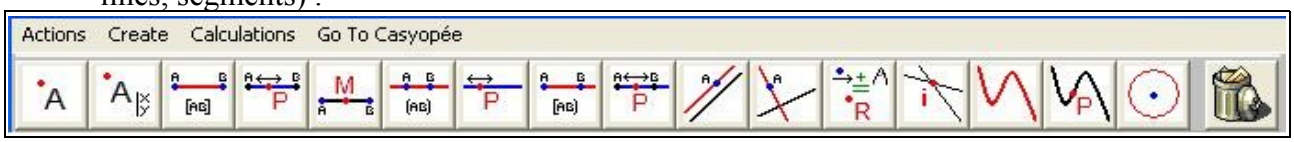
Now click on "Dynamic Geometry" button in Casyopée toolbar:

a window labelled "Dynamic Geometry" appears,



It can be ideally considered divided into 3 main parts:

- a tool-bar containing menus and some buttons fore creating geometrical objects (points, lines, segments) .



Below the tool-bar:

- on the left, there is a checkered area, where the geometrical objects created using the commands in the tool-bar above are displayed. A Cartesian system of coordinates is represented: the origin is labelled with “o”, labels “i” and “j” indicate the points having coordinates respectively (1,0) and (0,1). You can “move” this “paper” by clicking and dragging with the mouse any point of it .
- on the right, one can alternatively display the list of the created geometrical objects, clicking on “Historic”, or an area labelled “Geometric Calculations” which will partly deal with today.

Task 1

1. Create a “free point”, you can click on the icon – or select from the tool-bar “Create”-> “Point”-> “Free Point” – then click on the checkered area (label this point A).
2. Create a line passing through the just created free point and one of the points o, i or j ; to do that you can click on the icon – or select from the tool-bar “Create” -> “Line” -> “Line through two points” – then click on the two points through which you want the line pass.
3. Create a “fixed point” – different from o, i and j – giving its coordinates; you can click on the icon – or select from the tool-bar “Create”-> “Point”-> “Coordinated Point” – and then give the coordinates of the point (label this point B) .
4. Create a segment, whose endpoints are B and one of the point o, i or j. You can click on the icon – or select from the tool-bar “Create”-> “Segment” – then click on the two endpoints of the segment.
5. Create a free point bonded on the just created segment; you can click on the icon – or select from the tool-bar “Create”-> “Point”-> “Free Point on a Segment” – then click on the segment (label this poihnt C).
6. Create a line through C and parallel to the line created at step 2. You can click on the icon – or select from the tool-bar “Create” -> “Line” -> “Perpendicular Line” – then click on the point C and on the line created at step 2.
7. Create a line through C and perpendicular to the line created at step 2. You can click on the icon – or select from the tool-bar “Create” -> “Line” -> “Perpendicular Line” – then click on the point C and on the line created at step 2.
8. Create the intersection point between the line created at step 2 and its perpendicular; you can click on the icon – or select from the tool-bar “Create” -> “Point” -> “Intersection Point” -> “Intersection des 2lignes” – then click on the two lines separately.

Task 2

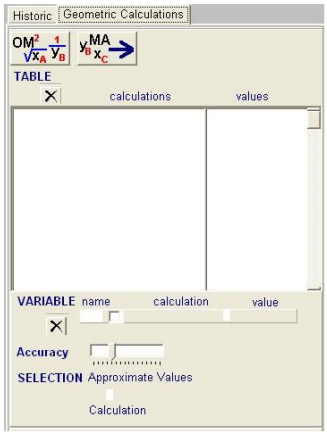
Try to drag all the created objects (points, lines, segments), observe what happens and take notes: which objects move and which do not, which properties are maintained and which are not...

In particular, carry out a systematic exploration, that is drag one point at time and take notes which points move and which do not. Summarize the results of your observation below.

I tried to drag the point...	Which points move?	Which points di not move?

Task 3

Click on the button "Geometric Calculations", a new area appears (see aside).



Click on the icon a pop-up window opens – "Create Calculation" – describe it and describe what you can do.

Did you succeed in creating "anything"? What?

Describe how the area "Geometric Calculation" is modified.

Task 4

Select one by one all the "object" created during the previous task, which are now displayed in the area "Geometric Calculation", then click on and drag the free points in the checkered area on the left. What do you observe?

Task 5

Click on the icon ("Choose a variable"). In the area "Geometric Calculation", a new area appears (see aside).

Describe the new area.

Which kind of variables can you define? While making your attempts, take notes of Casyopée

messages.

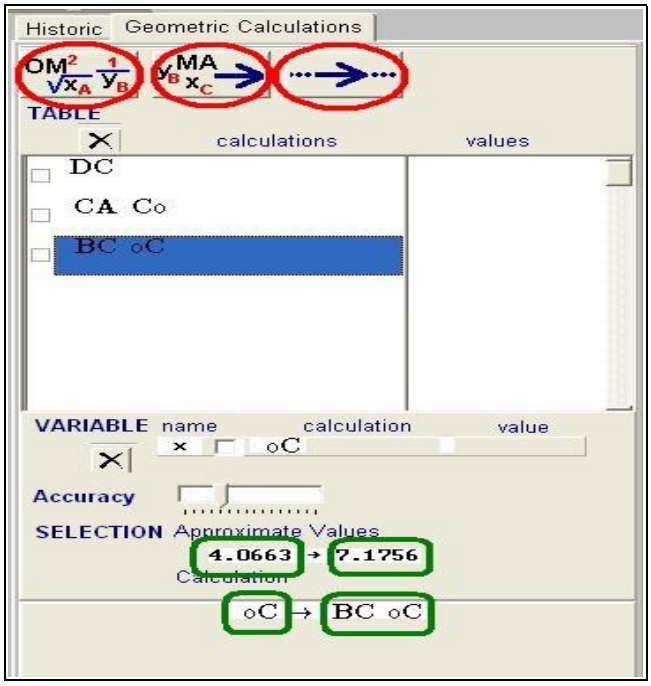
Task 6

Did you succeed in choosing a variable acceptable by Casyopee? (That is to click on the button "validate"?)Describe how the area Geometric Calculation changes after clicking on the button "validate".

In particular a new button appears. Try to click on it; which effect do you get? Did you succeed in creating "anything"?

Task 7

You can find aside the area "Geometric Calculation" as it appears after a work session.

Try to explain:

1. the purpose of the commands activated through the red-circled icons,
2. what is displayed in the green-circled zones,
3. the relationship between the commands activated through the red-circled icons and what displayed in the green-circled zones.