



**Mathematics in Education and Industry**

*Innovators in Mathematics Education*

## *MEI Conference 2010*

# **GeoGebra for beginners**

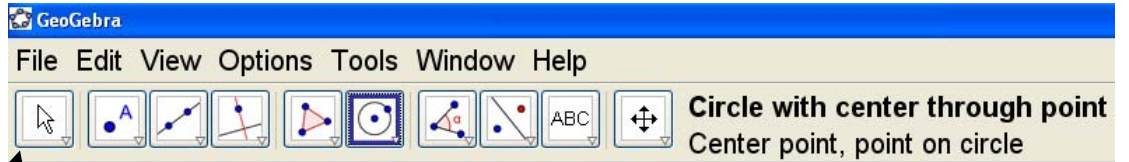
**Presenter: Bernard Murphy**

[bernard.murphy@mei.org.uk](mailto:bernard.murphy@mei.org.uk)

Workshop I5



Always click on this when you want to move a point or use a slider bar on the screen.



**View** gives you the option to show or hide the axes, grid and algebra window.

**Options** has many useful features including changing the font size.

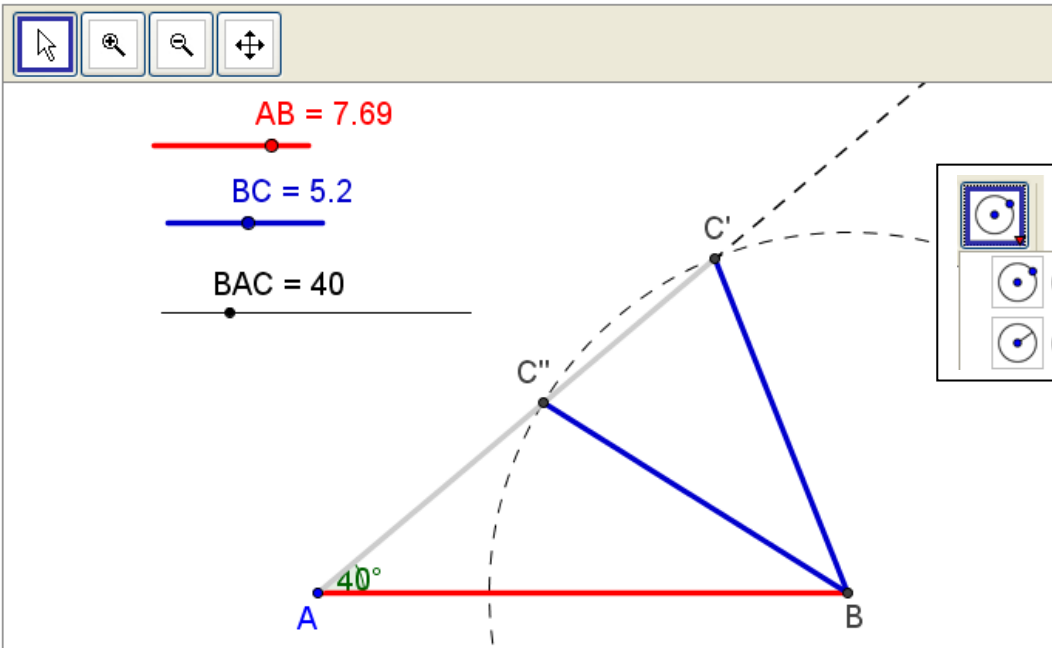
**Help** is invaluable and the users of the GeoGebra forum are very helpful.

Notice that once you've selected a button you will be given instructions on how to use it here.

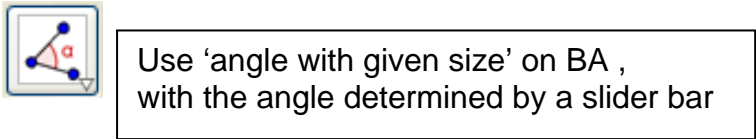
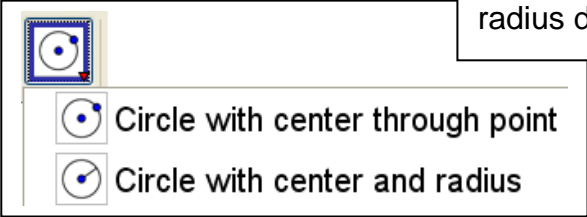
### The ambiguous case

Two sides, AB and BC, of a triangle are given along with angle BAC.

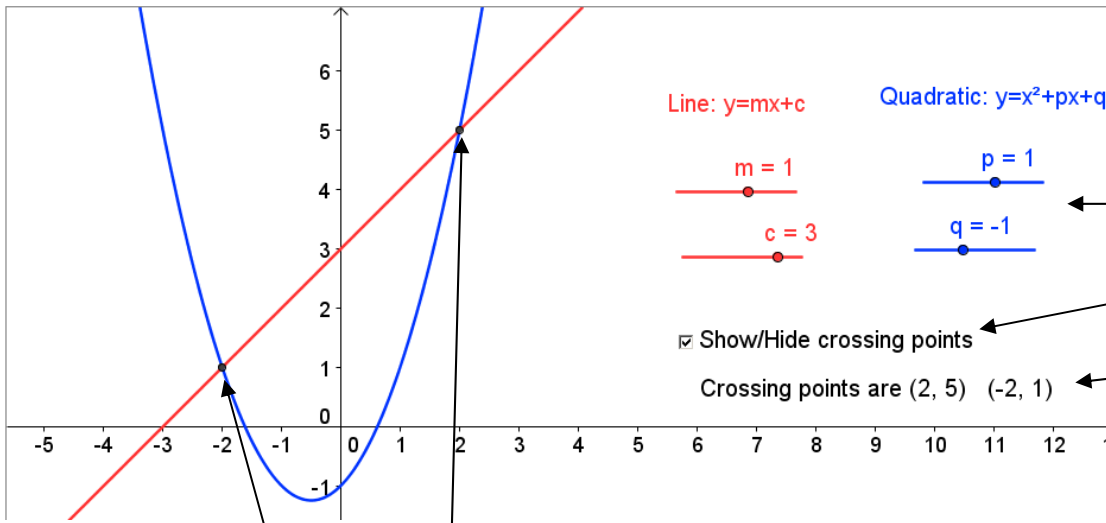
Under what conditions is it possible to construct two different triangles with these properties?



Draw a circle centred on B with radius determined by a slider bar



# Linear and quadratic simultaneous equations



Slider  
 Check box to show and hide objects  
 Insert text

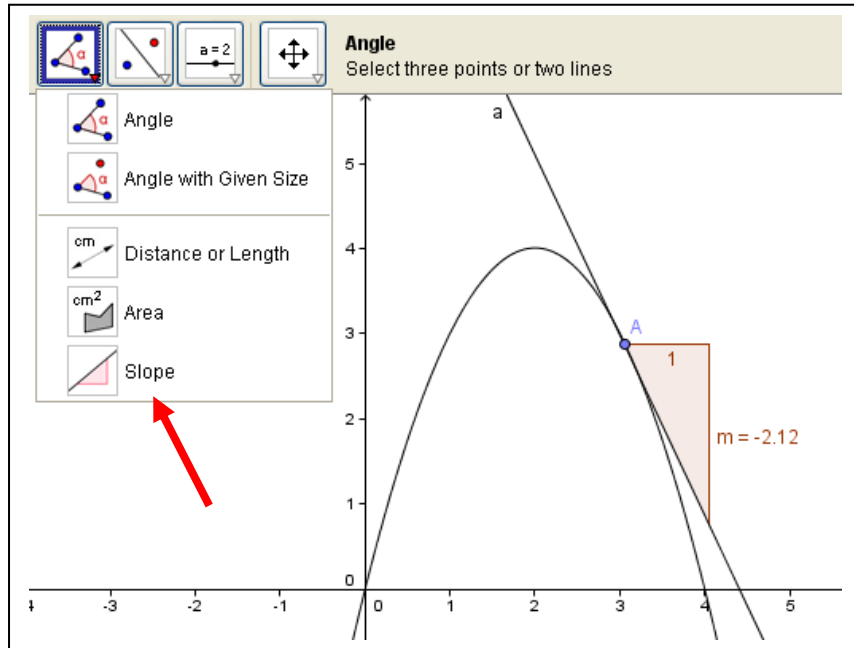
For dynamic text:  
 "Crossing points are " + A + " " + B

New Point  
 Intersect two objects  
 Midpoint or center

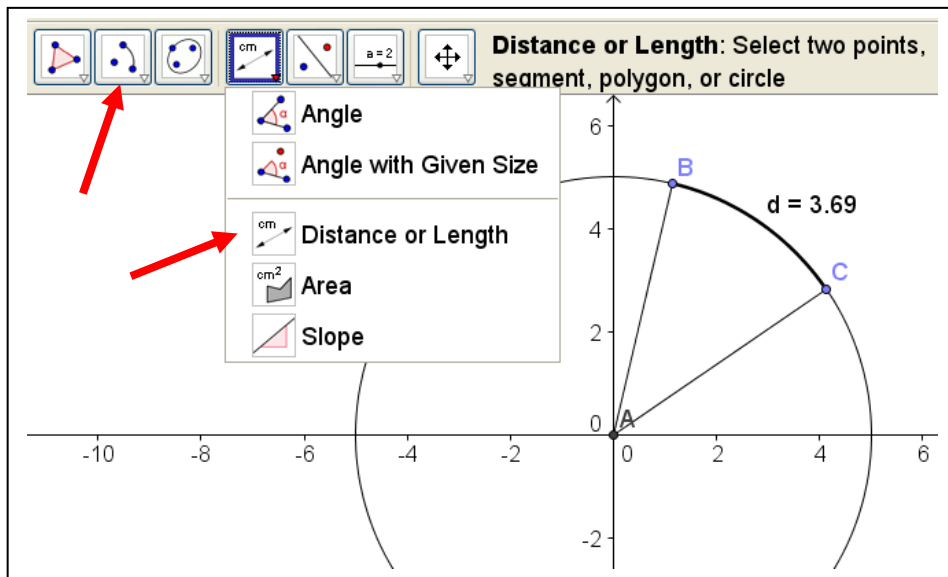
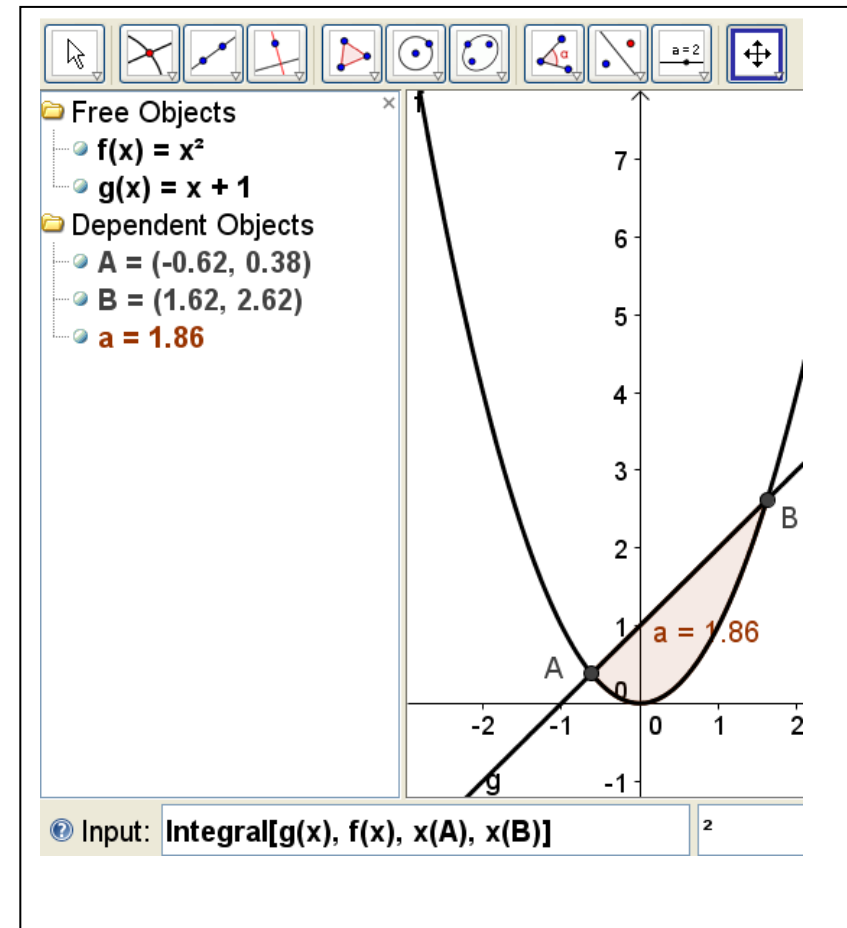
Move drawing pad  
 Zoom in  
 Zoom out  
 Show / hide object  
 Show / hide label  
 Copy visual style

Tip: At any time right click on the drawing pad to zoom in/out and change the increments on the axes.

Double click on any object and you will be able to change its colour and style. Having done this to one object you can use 'Copy visual style' to do the same to others



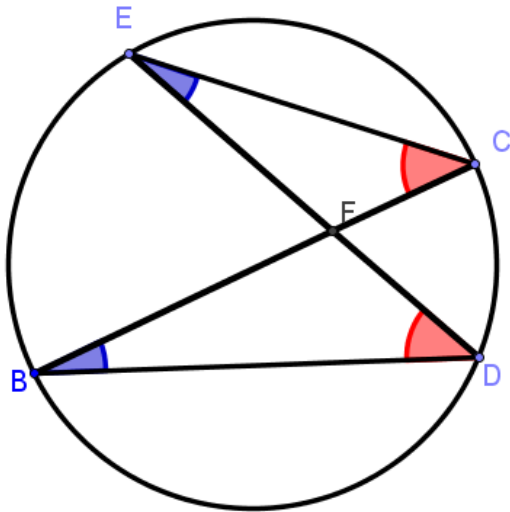
Some slightly more advanced features of  
**GeoGebra**



### Three Challenges.

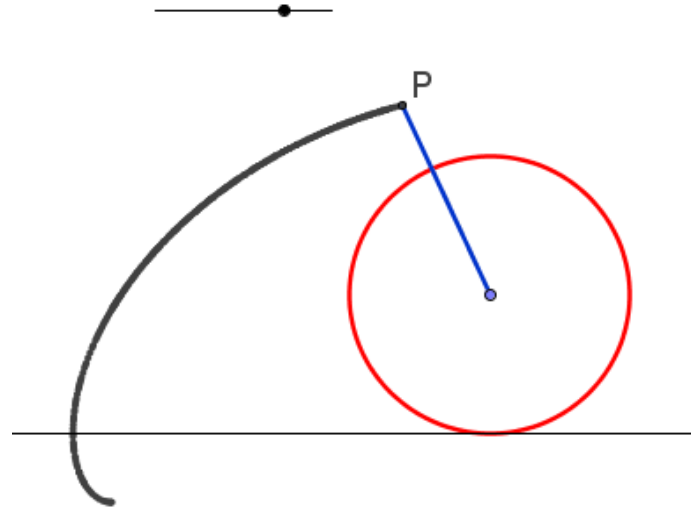
$$EF \times FD = 5.58 \times 3.98 = 22.18$$

$$BF \times FC = 6.83 \times 3.25 = 22.18$$



Distance of P along radius

$$r = 1.5$$



Touching circles centred on the vertices of a triangle

