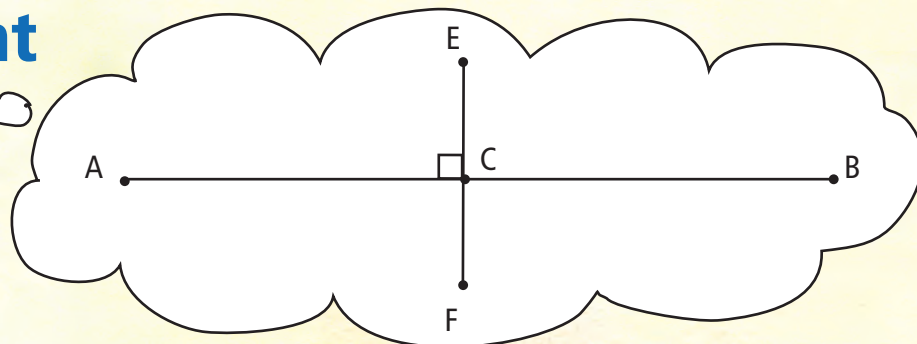
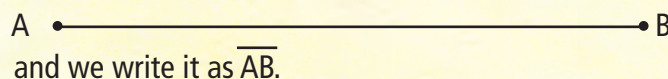


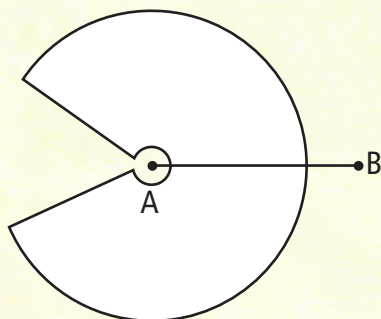
Using Mathomat to construct the perpendicular bisector of a given line segment



Step 1. To draw your perpendicular bisector start by drawing a line segment in your note book. Use your Mathomat and label the end points of your line segment as A and B. It should look like this:



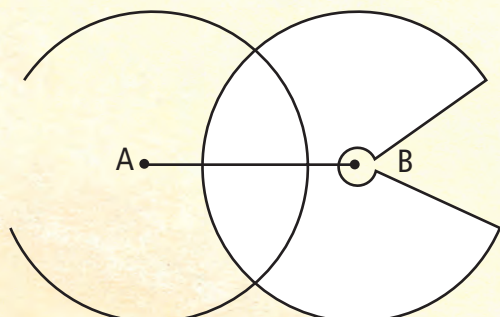
Step 2. Using shape 11 (TGT) in Mathomat. Align its centre point with A at the left of the line section AB. Now trace an arc as shown.



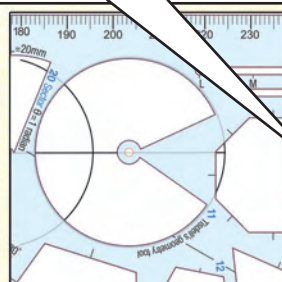
The diameter of the TGT in this example is more than half the length of line segment \overline{AB} . If the TGT diameter is less than half the length of the line being bisected see Professor Tisdell's video for bisecting long line segments in the Mathomat Explorer manual support section.



Step 3. Repeat step 2 using the same circle, connecting with point B.



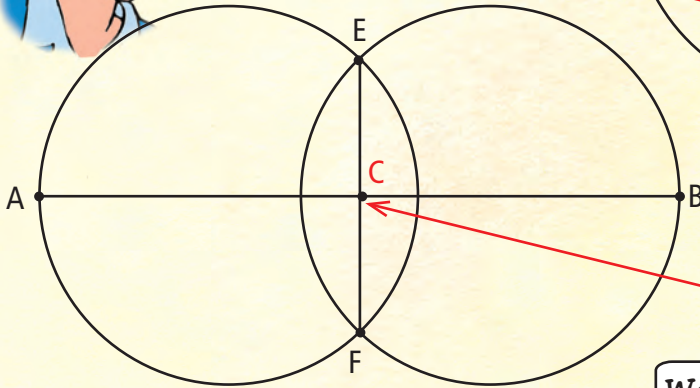
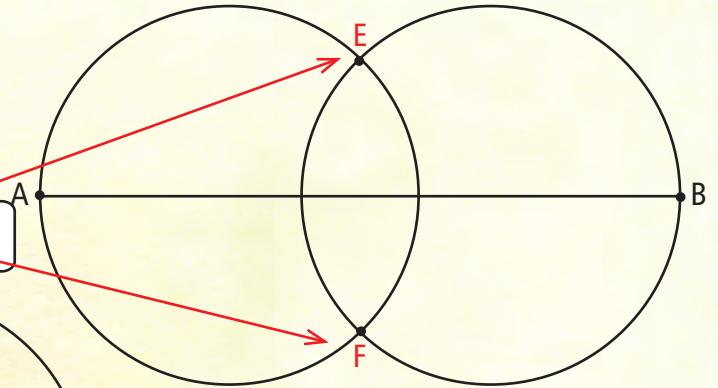
Step 3. Now align shape 11, the TGT, with its centre over point B and draw a second arc as shown.



Step 4. Find the two points of intersection between the circles in your drawing.



Label them E and F.



Step 5. Using Mathomat draw a new line segment between the points E and F. Mark where this meets line segment AB.

We will call this point C.



I can say that line segment \overline{EF} is the perpendicular bisector of line segment \overline{AB} .

And I can also say that point C is the mid-point of line segment \overline{AB} . So the length of \overline{AC} , written $|\overline{AC}|$ is equal to the length of \overline{BC} , written $|\overline{BC}|$.

and because \overline{EF} is the perpendicular bisector of \overline{AB} , therefore angle ACE is 90° , written $\angle ACE = 90^\circ = \angle BCE$.

That is interesting. My compass slips when I try to use it.

Look at this video on the Mathomat website, Lily ...



...Professor Tisdell designed the new geometry tool for use in Mathomat, the TGT. He thinks it's better than a compass for doing geometric constructions. It's more accurate and easier to use than a compass.

Mine too.

Let's use our Mathomat V7 to do one of these constructions.

Full size printable pages will be found in MAC. Go to www.mathomatactivitycentre.com.au.