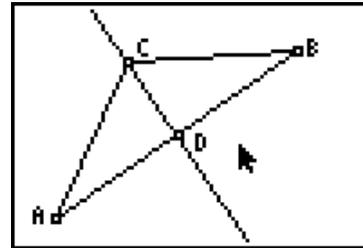




Problem 1 – Exploring the Perpendicular Bisector Theorem

Start the *Cabri Jr.* application by pressing **[APPS]** and selecting **Cabri Jr.** Open the file **PERBIS** by pressing **[Y=]**, selecting **Open...**, and selecting the file.

Line CD is the perpendicular bisector of \overline{AB} . Find AC and BC using the **Distance and Length** tool (press **[GRAPH]** and select **Measure > D.&Length**). Remember that AC means the length of \overline{AC} .



1. Move point C to 4 different positions and record the measurements in the table below. To move the point, move the cursor over the point, press **[ALPHA]**, move the point to the desired location, and then press **[ALPHA]** again to release the point.

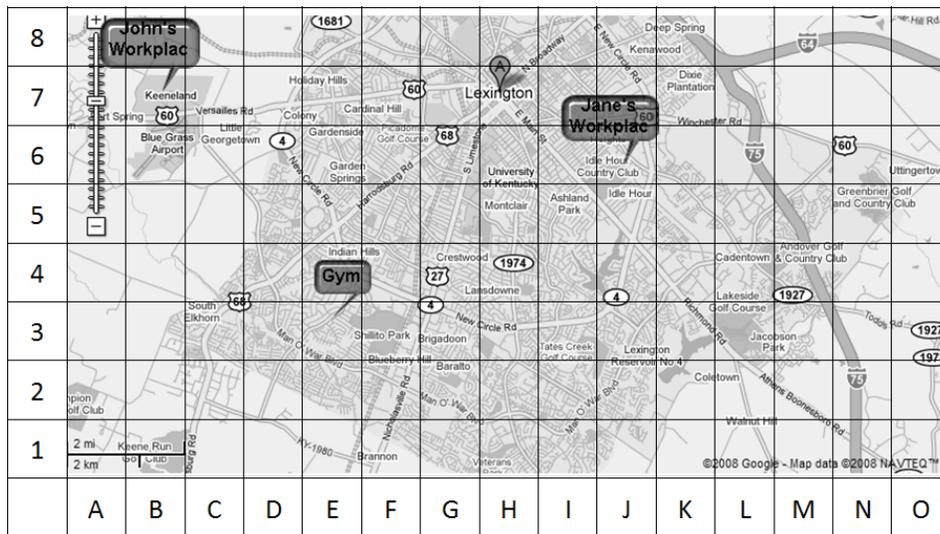
Position	1 st position	2 nd position	3 rd position	4 th position
AC				
BC				

2. What is the relationship between the measurements of AC and BC ?

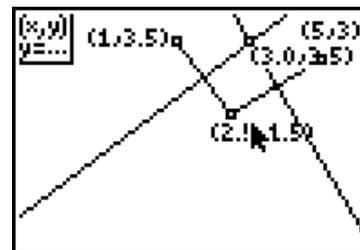
3. Make a conjecture based on your results above about a point on the perpendicular bisector and the endpoints of a segment.

Problem 2 – An Application of the Perpendicular Bisector Theorem

Mimi and Jane are young college graduates relocating to a new city. They have jobs at separate locations, but work out at the same gym. They would like to rent an apartment that is equidistant from their jobs and gym. They use the map below and see that Mimi’s workplace is located at B7, Jane’s workplace is at J6, and their gym is located at E3.



Open the *Cabri Jr.* file **POINTS**. Three points are plotted: ordered pair (1, 3.5) represents B7; ordered pair (5, 3) represents J6; and ordered pair (2.5, 1.5) represents E3.



4. Use Perpendicular Bisector Theorem to decide where Mimi and Jane should live.

5. Using the map’s notation, where should the graduates live?