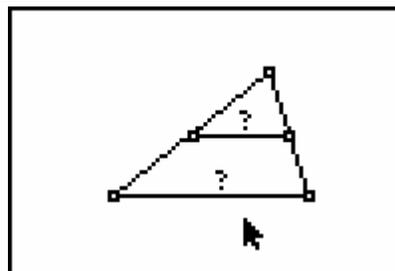


# CABRI™ JR. ACTIVITY 15: INVESTIGATING LENGTHS OF SEGMENTS IN A TRIANGLE

## ACTIVITY OVERVIEW:

In this activity we will

- Draw a triangle
- Find the midpoints of two sides of the triangle
- Draw and measure the segment joining the midpoints of these two sides
- Compare the length of this segment to the length of the third side of the triangle

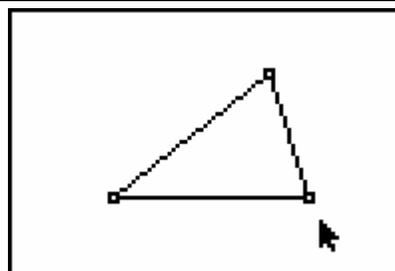


Press **[APPS]**. Move down to the CabriJr APP and press **[ENTER]**. Press **[ENTER]**, or any key, to begin using the application.

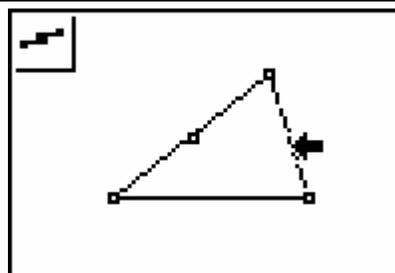
Press **[Y=]** for the F1 menu and select **New**. (If asked to **Save changes?** press **[↓]** **[ENTER]** to choose “No.”)



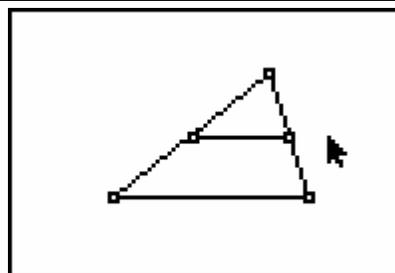
Press **[WINDOW]** for F2, move down to **Triangle** and press **[ENTER]**. Move to the location of a vertex and press **[ENTER]**. Move to the second vertex and press **[ENTER]**. Move to the third vertex and press **[ENTER]**. Press **[CLEAR]** to exit the triangle drawing tool.



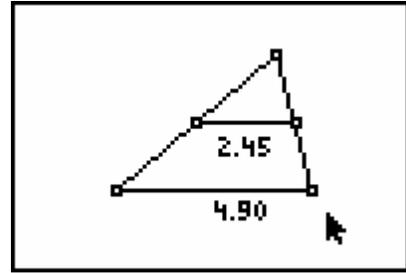
Press **[ZOOM]** for the F3 menu, move down to **Midpoint** and press **[ENTER]**. Move the arrow until a side of the triangle is flashing and press **[ENTER]**. Move until another side of the triangle is flashing and press **[ENTER]**.



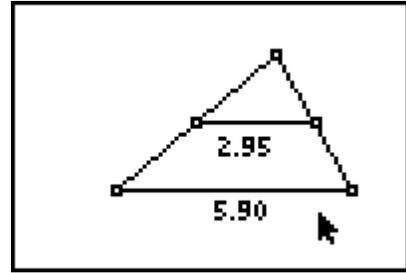
To draw the segment joining the two midpoints, press **[WINDOW]**, move down to **Segment**, and press **[ENTER]**. Move the pencil until one midpoint is flashing and press **[ENTER]**. Move the pencil until the other midpoint is flashing and press **[ENTER]**.



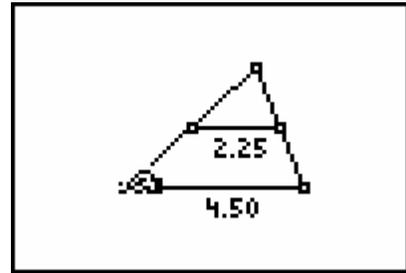
Press **GRAPH** for the F5 menu to measure the length of the segment joining the two midpoints. Move down to **Measure** and right to **D & Length**. Press **ENTER**. Move the arrow until the segment joining the midpoints is flashing. Press **ENTER**. Press **+** to see the measurement rounded to hundredths. Move the measurement to a convenient location. Press **CLEAR** to turn off the hand. With the measurement tool still active, move until the third side of the triangle is flashing and press **ENTER**. Press **+** for hundredths. Move the measurement to a convenient location. Press **CLEAR** to turn off the hand. Press **CLEAR** again to exit the measurement tool.



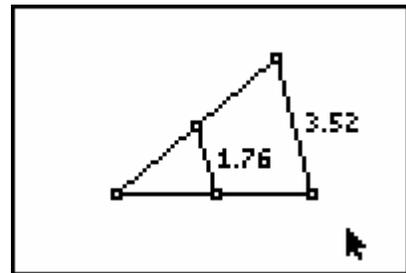
How does the length of the segment joining the midpoints of two sides of a triangle compare to the length of the third side? Test this conjecture on other triangles by moving to a vertex, pressing **ALPHA**, changing the position of the vertex, and observing the changes in the measurements of the segments.



“The measure of the segment joining the midpoints of two sides of a triangle is one-half the measure of the third side.”



Test the conjecture using different sides of the triangle.



To exit the APP, press **Y=** for the F1 menu. Move to **Quit**, then press **ENTER**. (Or you can press **2nd** **MODE** for [QUIT].)

