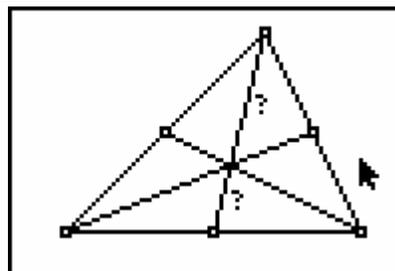


# CABRI™ JR. ACTIVITY 17: EXPLORING THE *CENTROID* OF A TRIANGLE

## ACTIVITY OVERVIEW:

In this activity we will

- Draw a triangle
- Draw the medians of the triangle
- Locate the *centroid*
- Explore measures of the segments in the triangle

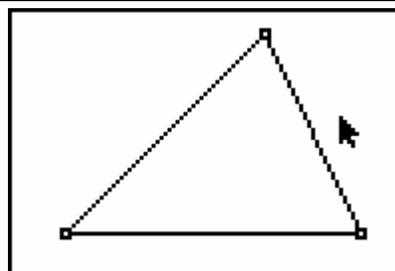


Press **[APPS]**. Move down to the CabriJr APP and press **[ENTER]**. Press **[ENTER]**, or any key, to begin using the application.

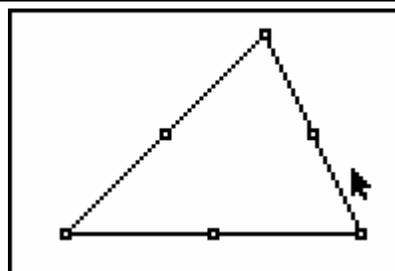
Press **[Y=]** for the F1 menu and select **New**. (If asked to **Save changes?** press **[↓]** **[ENTER]** to choose “No.”)



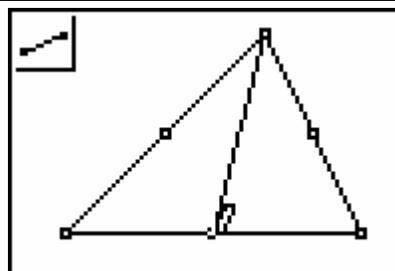
Press **[WINDOW]** for F2, move down to **Triangle** and press **[ENTER]**. Move to the location of a vertex and press **[ENTER]**. Move to the second vertex and press **[ENTER]**. Move to the third vertex and press **[ENTER]**. Press **[CLEAR]** to exit the triangle drawing tool.



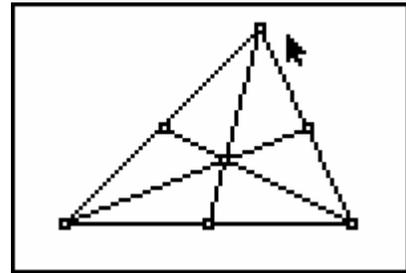
To draw the medians we must first locate the midpoints of the sides. Press **[ZOOM]** for the F3 menu, move down to **Midpoint** and press **[ENTER]**. Move the arrow until a side of the triangle is flashing and press **[ENTER]**. Move until another side of the triangle is flashing and press **[ENTER]**. Move until the third side of the triangle is flashing and press **[ENTER]**.



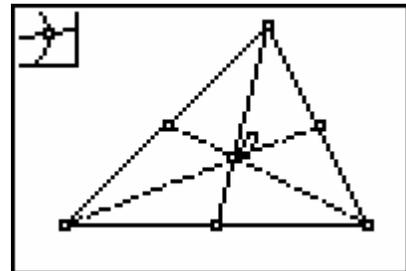
Now we will draw the medians of the triangle. To draw a segment from a vertex to the midpoint of the opposite side press **[WINDOW]** for F2. Move to **Segment** and press **[ENTER]**. Move the pencil until a vertex is flashing and press **[ENTER]**. Move the pencil until the midpoint of the opposite side is flashing and press **[ENTER]**.



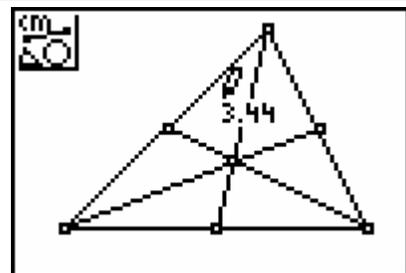
With the **Segment** tool still active, draw the other two medians of the triangle.  
 When all three medians are drawn, press **[CLEAR]** to turn off the segment tool.



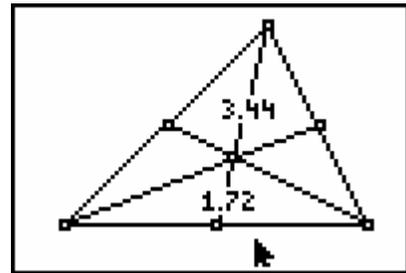
The medians of the triangle intersect at a common point. This point is called the *centroid* of the triangle.  
 To mark this point, press **[WINDOW]** for the F2 menu. Move to **Point**, then right and down to **Intersection**. Press **[ENTER]**. Move the pencil until two of the medians are flashing then press **[ENTER]**. How does the length of the segment from a vertex to the centroid compare to the length of the segment from the centroid to the midpoint?



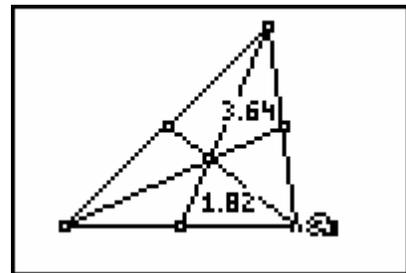
Press **[GRAPH]** for the F5 menu. Move to **Measure** and **D. & Length**. Press **[ENTER]**. Move to a vertex and press **[ENTER]** when the point is flashing. Move to the *centroid* and press **[ENTER]** when the point is flashing. Press **[+]** to display the measurement rounded to hundredths. Move the measurement to a convenient location then press **[CLEAR]** to turn off the *hand*.



Move the pencil until the *centroid* flashes. Press **[ENTER]**. Move until the midpoint is flashing and press **[ENTER]**. Press **[+]** to display hundredths. Move the measurement, press **[CLEAR]** to turn off the *hand*, and then press **[CLEAR]** to exit the measurement tool.



It appears that the segment from the vertex to the *centroid* is twice the length of the segment from the *centroid* to the midpoint.  
 Test this conjecture by changing the triangle. Move to a vertex and press **[ALPHA]** when the point is blinking. Move the point and observe the changes in the measures of the segments.



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

