

Finding the Centroid

On a plain Geometry Page

- construct a triangle by going to (menu) → Shapes → Triangle.
- When you have a triangle on the screen, find the midpoint of each side by going to (menu) → Construction → Midpoint and clicking on each side (the Nspire will automatically find the midpoint).
- Now construct the medians of the triangle by going to (menu) → Points and Lines → Segment and drawing a segment from each vertex to its opposite midpoint.
- Place a point on the intersection point of the medians by going to (menu) → Points and Lines → Intersection Point and clicking on 2 of the medians.

This point is the center of gravity of the three points, otherwise known as the centroid. You can move the vertices of the triangle around to see that the centroid will always lie within the triangle.

Let's analyze the length of the longer segment of a median with respect to the length of the entire median.

- Go to (menu) → Measurement → Length and click on the vertex of the triangle and the intersection point of the medians and click again to drop the measurement on the screen.
- Now go to (menu) → Measurement → Length again and this time find the length of the entire median and click to drop that measurement on the screen.
- Here's the tricky part: go to (menu) → Actions → Text and click somewhere on the screen. Type the formula a/b and hit Enter.
- Now we are going to calculate using that formula by going to (menu) → Actions → Calculate. Click on the formula, then click on the length of the longer segment of the median, then click on the length of the entire median, then click on the screen near the formula a/b .

From this what do you observe about the position of the centroid in the triangle and on the median itself?