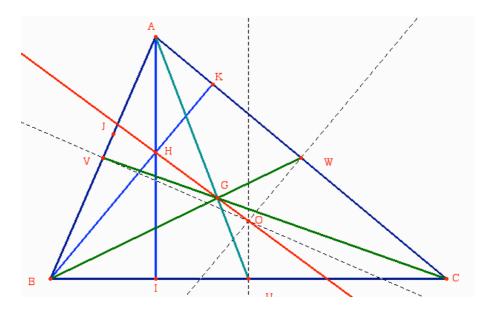
北京景山学校 Name:	Grade : /100
jiguanglaoshi@gmail.com	Mathematics - Geometry ++ Junior 8
http://beijingshanmaths.org	Exercise #7 Dec. $16 - p.1/1$

Euler's line proof by using vector calculations only.

Let ABC be a regular triangle, U the midpoint of BC, V the midpoint of AB, and W the midpoint of AC.



- 1. Let M be the point defined by the vectorial equation $\overrightarrow{MA} + \overrightarrow{MB} + \overrightarrow{MC} = \overrightarrow{O}$ Show WHY this point M is the intersection G of the three median lines AU,BV,CW.
- 2. Let N be the point defined by the vectorial equation $\overrightarrow{OA} + \overrightarrow{OB} + \overrightarrow{OC} = \overrightarrow{ON}$ Show WHY this point is the intersection H of the three heights AI, BK, CJ
- 3. From the above vectorial relations prove that O, G, H are on the same line (Euler's line).