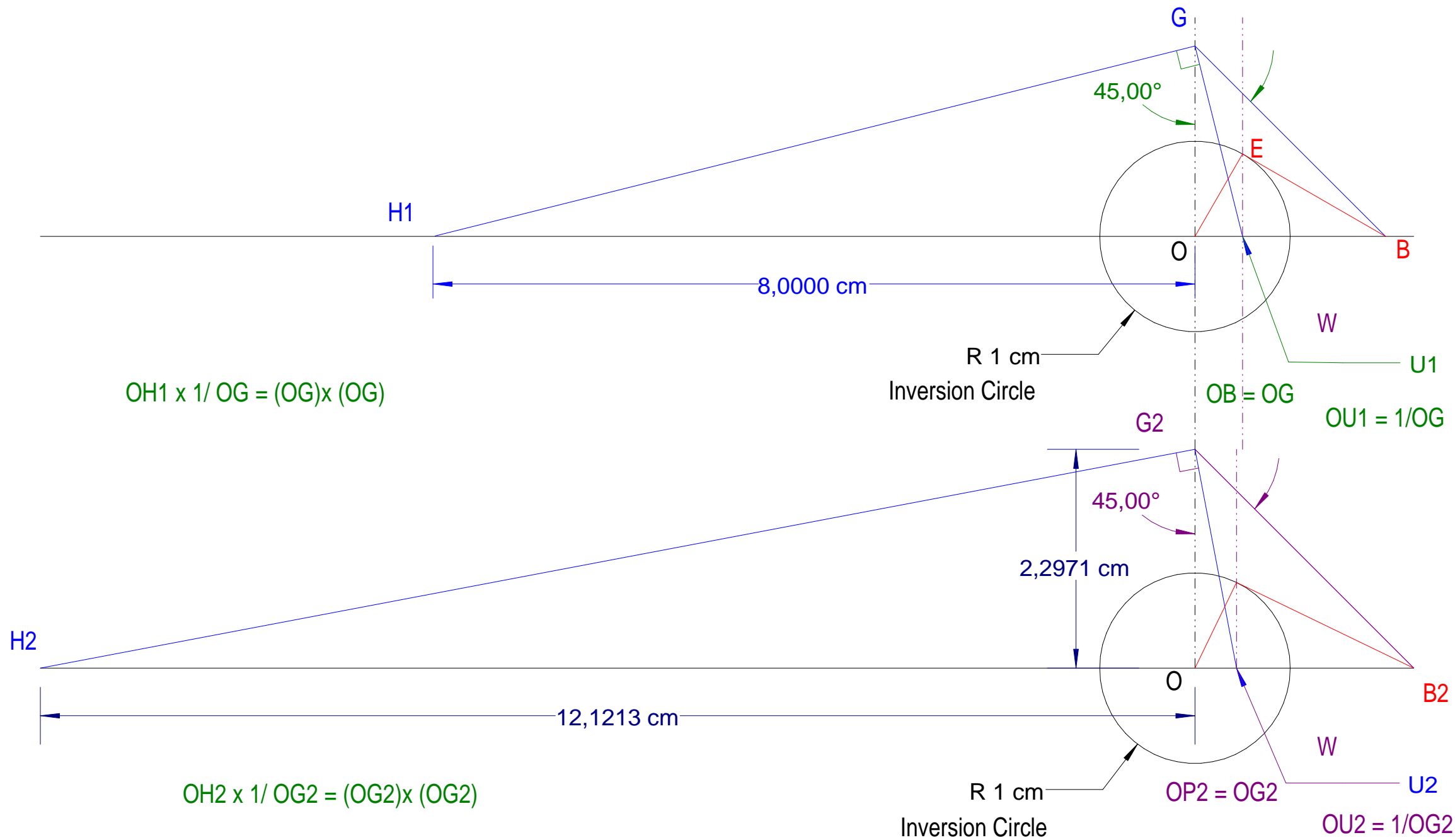


The file attach describe a neusis procedure I believe will find the cubic root of a given number by using a method base on inversion.

- 1) In a **millimeter** lined graph **paper** sheet we draw the two customary axes OX and OY and a circumference of radius one cm center in the origin. We graduate at our convenience the OX part using same unit that the one used for the mentioned circumference, now we locate a point we will call H1 being OH1 the segment representing the number we intend to get the cubic root. Of course we cannot get the cubic root of segment longer than the end of our piece of paper unless than we scale down our given number by previously dividing it by 8, 27...1000 or any other cubic divisor so it can be located within the range of our OX axis. Once we get the solution we will factor the root back to get the answer. Nor we can get a number which inverse is beyond of the range of our circumference of inversion but in anyway we can always scale the number down as said above.
- 2) In transparency sheet we draw another two axis GV and GW, without marking any division on the axis. We will call this transparency **T**
- 3) We will make another transparency we call it **S** smaller in size with the two axis EA and EB and on axis EA we will mark one unit at point F an we will pin F on the origin O of our first sheet, so E will be a point of our circumference of one unit radius
- 4) Now we locate the transparency **T** over our original sheet, so the origin G being located on axis OY and axis GW must pass on H1 then GV will cut OX in U1. Now we have to accommodate by rotating transparency **S** and sliding G of transparency **T** until points E an U1 get both in the same vertical line, at this situation the segment OU1 will be the inverse OG and OG will represent the cubic root of our number represented by segment OH1, and the segment OB will equal OG.

We also can use a Peaucellier inversor for the task as I thought at first an sketch of the procedure is in the other file but is a little more cumbersome unless that you has one handy. I wish I could know how to make those wonderful Java applet so frequent at this website because I am sre tha the adjusting with the inversor will be a fun job.



Extracting the Cubic root of a number by using Peaucellier Inversor

