## Discussion before project 1

## Radical number line and Theodorus (idee from Italy)

Nice idea to combine art twith math stuff! (Monika, GER)

## Document: different spirals and sharing of work

See discussion. If you agree to the proposal this could be a way of sharing work. Then feel free to add to which idea your students like to contribute. I have invited all of you to a Google doc.
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## Theodorus Spiral (RO)

We made also a tool for this construction.
Input: triangle rectangle (cath: 1,1 ) and number n ( nr .of degrees)
Link
Fibonacci 1,1,2,3,...
$1,1,2,3, \ldots$

## Diacussion here

My idea:
Each of us is responsible for a way of creating spirals. We teach our students how to do it (or let them watch a video). Then students have to explain it to all students in the other countries how it work with a video. Screencat-o-matic records sound and e.g. the GeoGebra screen. The English should be slowly. All students are taught by another student. Students can watch the video several times. it could also be possible to make a worksheet step by step or a PPT or ... Students can give comments to the "student teacher" in a twinboard. That would be cooperation at a very high level. the youngest students can record "easy-tocreate" spirals the others spirals which are more difficult or can explain the background. What about this? (GER)

## Three Phytagoras

We'll do a tutorial on the Pythagorean Tree. We will do pencil work and in Geogebra (Renata, POL)

## Spirals bounded to circles

Instead of leaving in a simple way as in the radius $r(t)$ and the angle $t$ in a proportional for the simpliest spiral, the spiral of Archimedes, where the equation is: Polar equation: $r(t)=$ at [a is constant], and in the Parameter form: $x(t)=$ at $\cos (t), y(t)=$ at $\sin (t)$,
Central equation: $x^{2}+y^{2}=a^{2}[\arctan (y / x)]^{2}$.
We decide to embed a dynamic ray bounded to dynamic circles we obtain artistic drawings like this (Norma Lisa Neiman) Link

WONDERFUL! (Monika Schwarze)
Thank You

## Creating Logarithmic spirals in GeoGebra

Interesting video on how to create spriaòs with GeoGebra


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