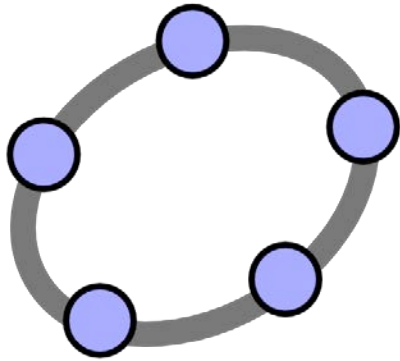


GeoGebra

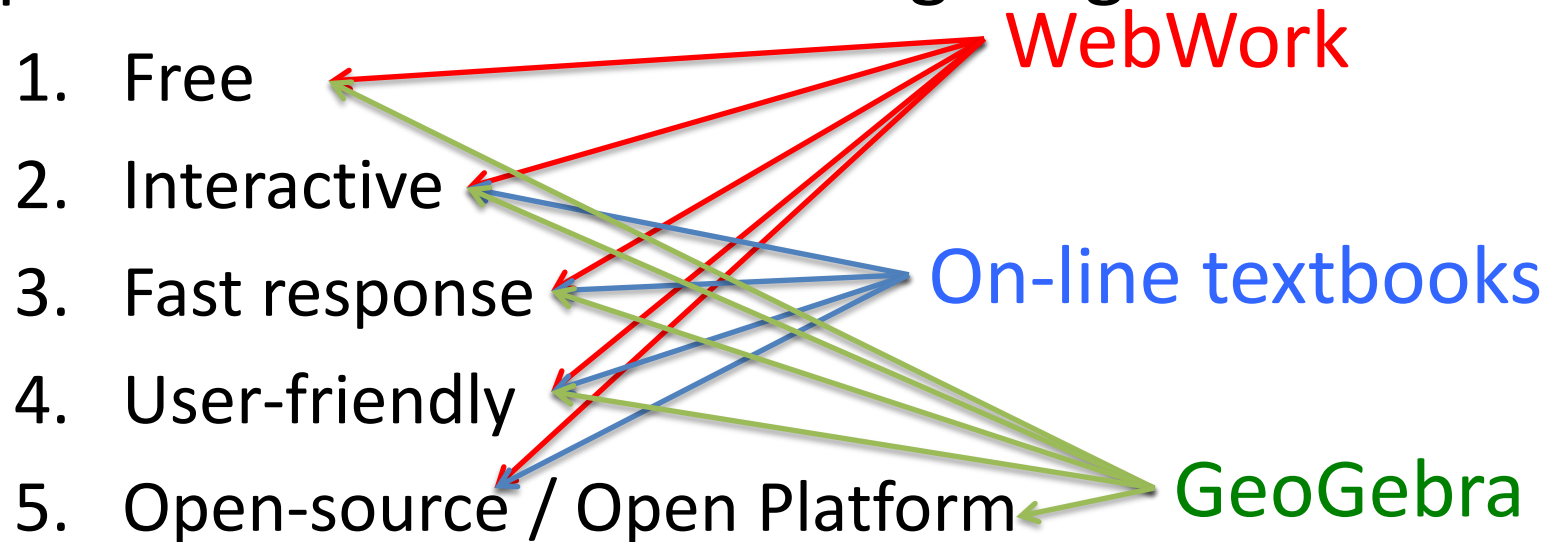
Expectations of the technological generation:

1. Free
2. Interactive
3. Fast response
4. User-friendly
5. Open-source / Open Platform



GeoGebra

Expectations of the technological generation:




Our current graphing calculators are none of these

PCC's current technology requirement for Math 95 and above vs. GeoGebra

★★★★★
\$167.⁹⁹
List Price: ~~\$175.00~~
You Save: **\$7.01**

Calculator
★★★★★
\$119.⁹⁹
List Price: ~~\$128.00~~
You Save: **\$8.01**

Silver...
★★★★★
\$166.⁹⁰
List Price: ~~\$204.80~~
You Save: **\$37.90**



Texas Instru
★★★★★

Buy from Wal

Online
\$140.⁶³

Quantity
1

Add to my: **Wish**

save4 School

TEXAS INSTRUMENTS

GeoGebra

Install GeoGebra

You are free to copy, distribute and transmit GeoGebra for non-commercial purposes. Please see the [GeoGebra license](#) for details.

GeoGebra Tablet Apps

Available on the Windows Store

Available on the App Store

Available on the Google Play Store

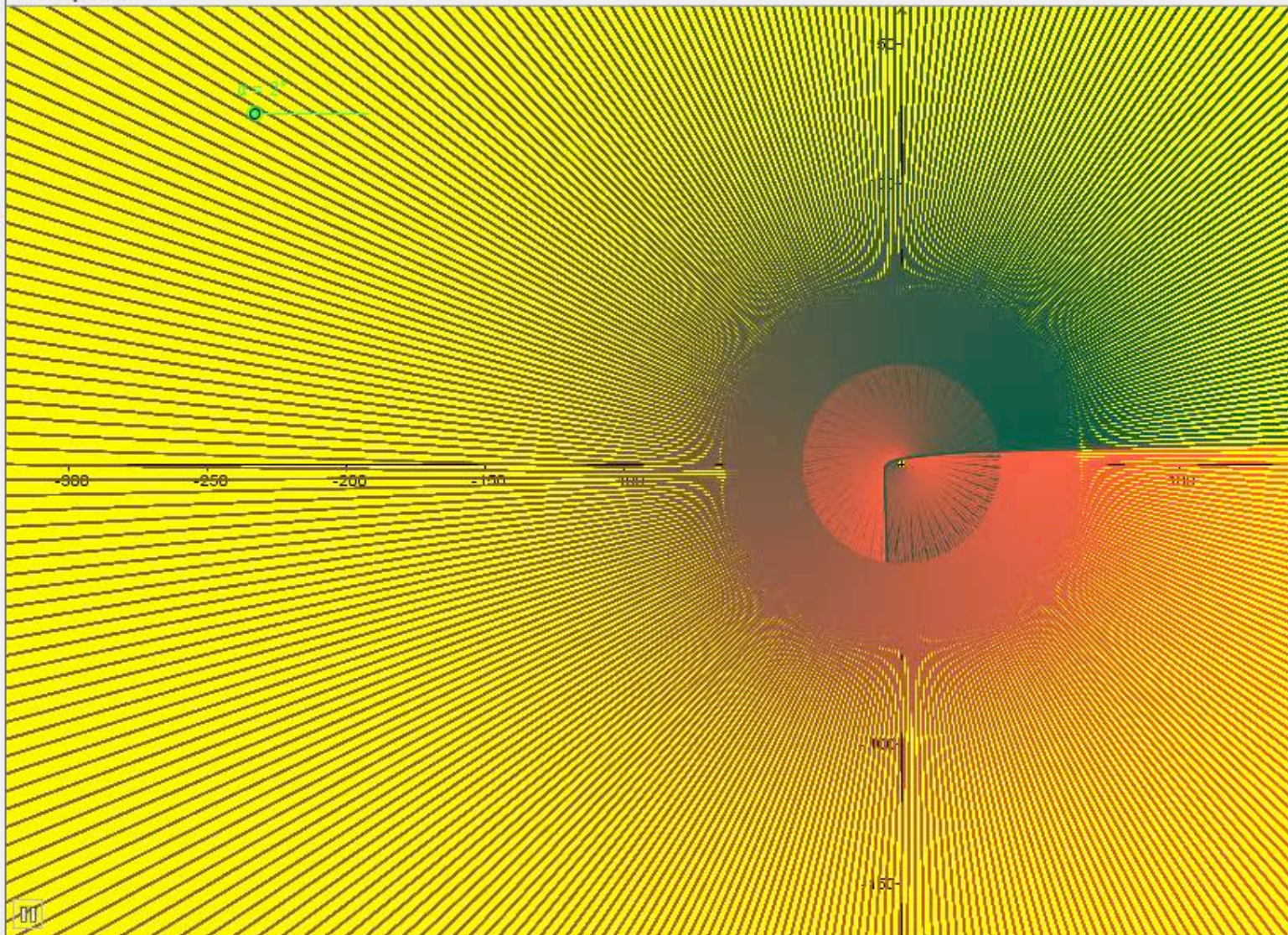
GeoGebra App for Windows 8





- Algebra
- Angle
 - $\alpha = 325^\circ$
 - Function
 - $f(x) = \ln(x + 6.28)$
 - Number
 - $b = 6.28$
 - Parametric Curve
 - $f_1: \begin{cases} x = 1(t) + 0.09(\ln) \\ y = -0.09(t) + 1 \end{cases}$
 - Point
 - $A = (0, 0)$

Graphics



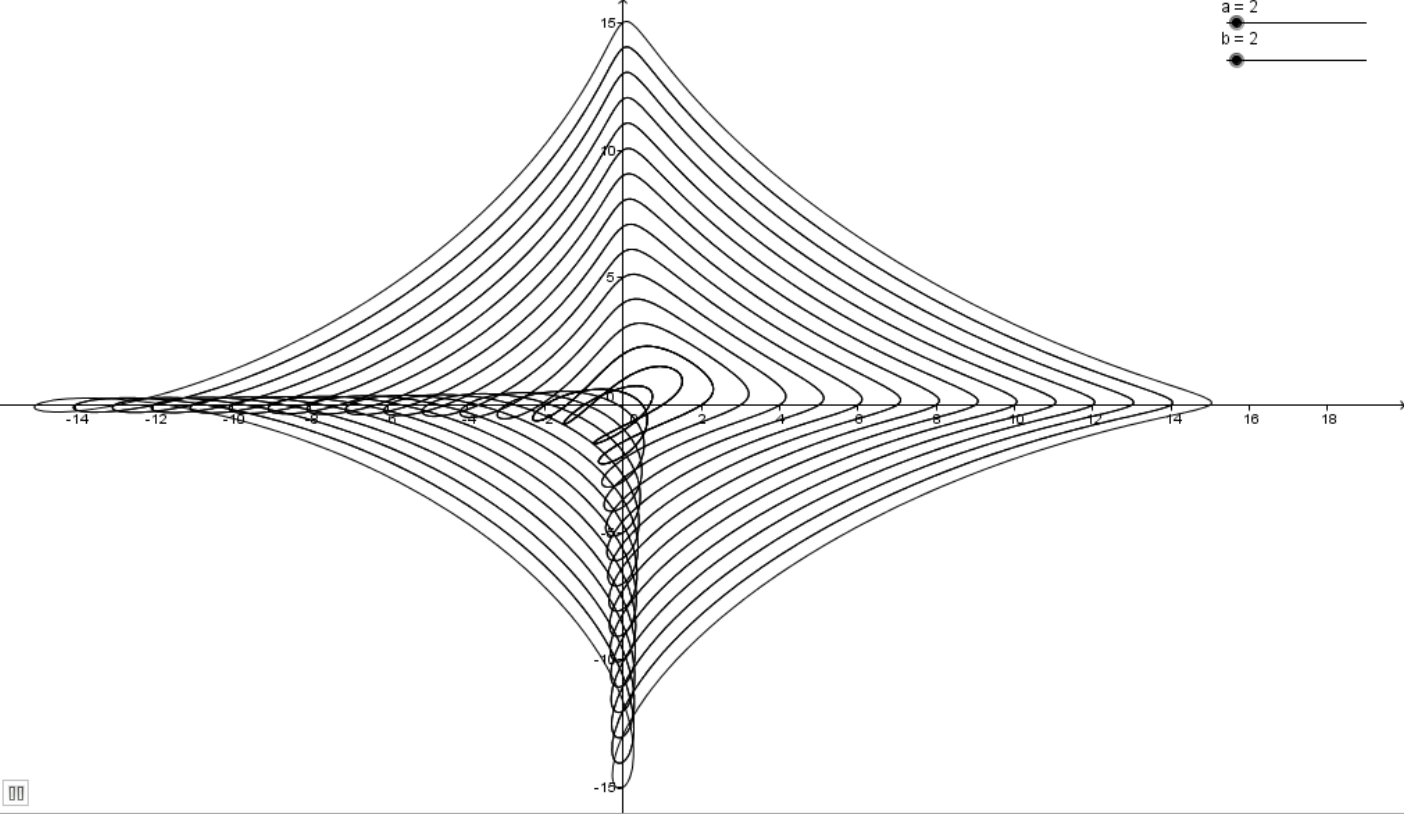
Input:



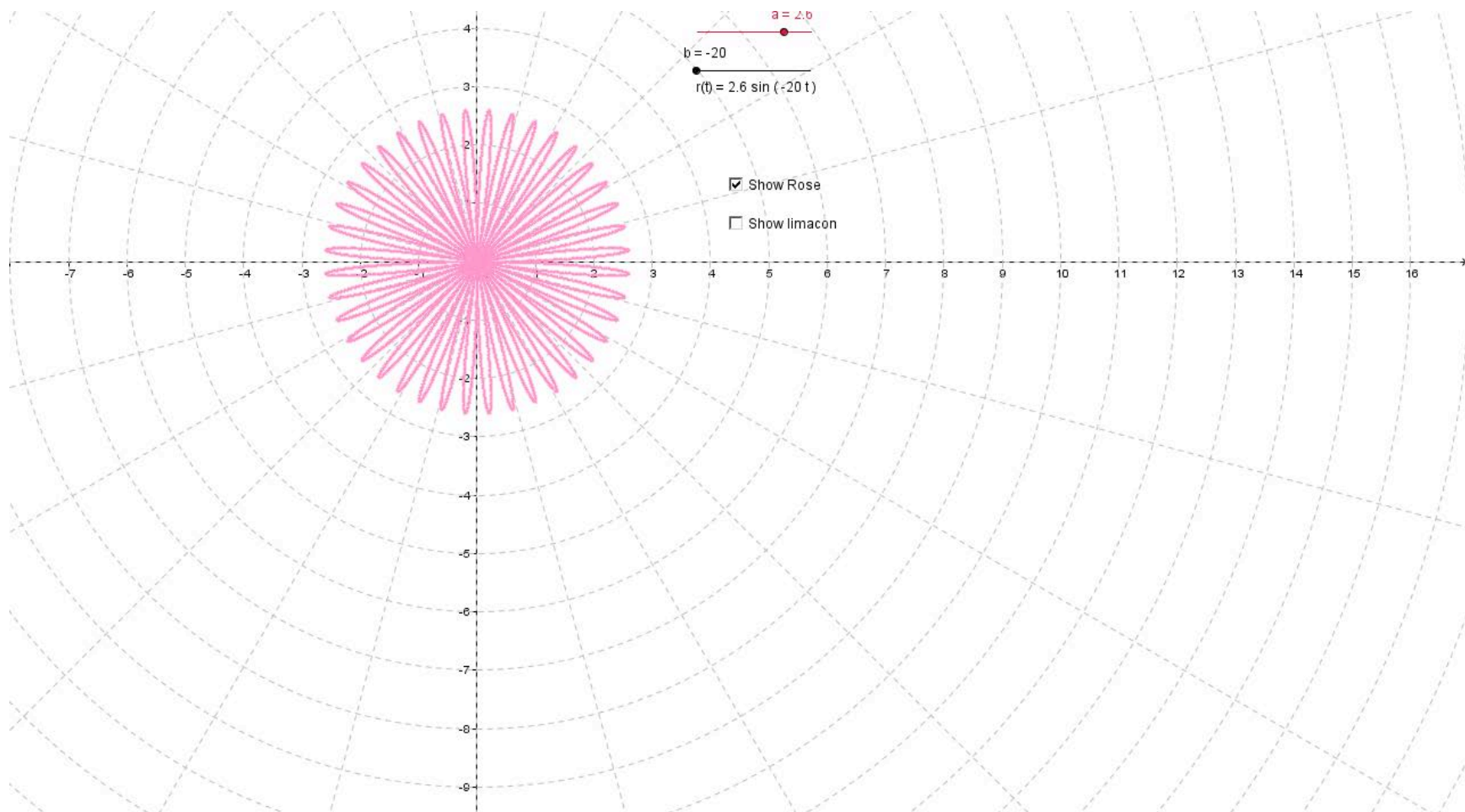
Algebra

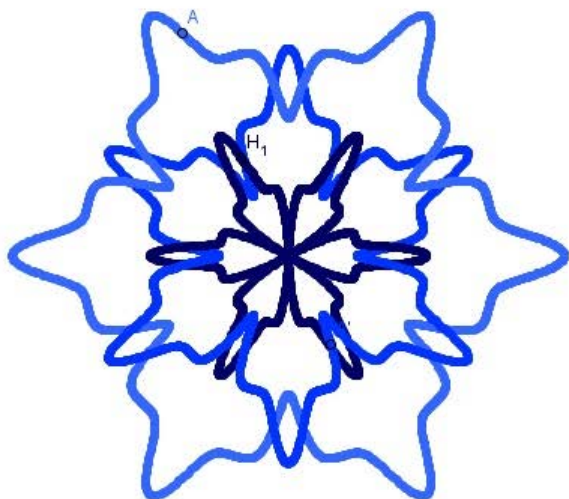
Number
a = 2
b = 2
Parametric Curve
c:
$$\left. \begin{aligned} x &= 2 \cos^3(t) + \sin(2t) \\ y &= 2 \sin^3(t) + \sin(2t) \end{aligned} \right\} 0 \leq t \leq 6.28$$

Graphics



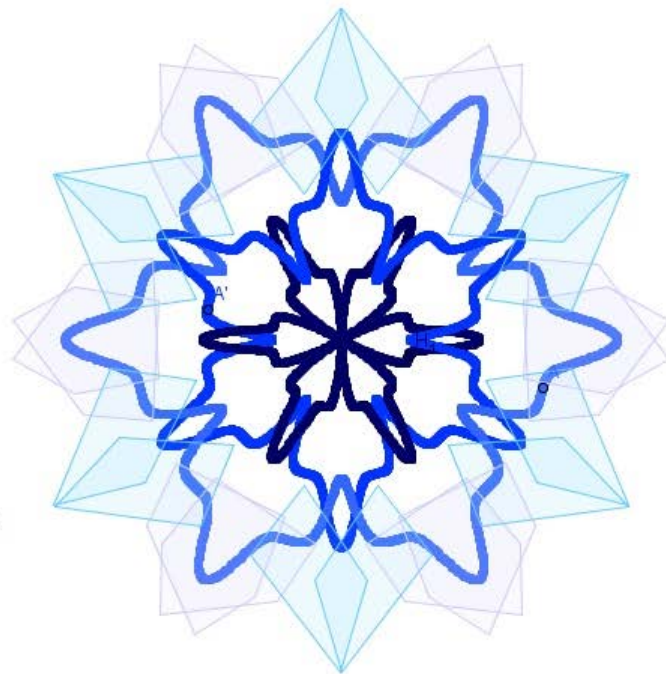
Input

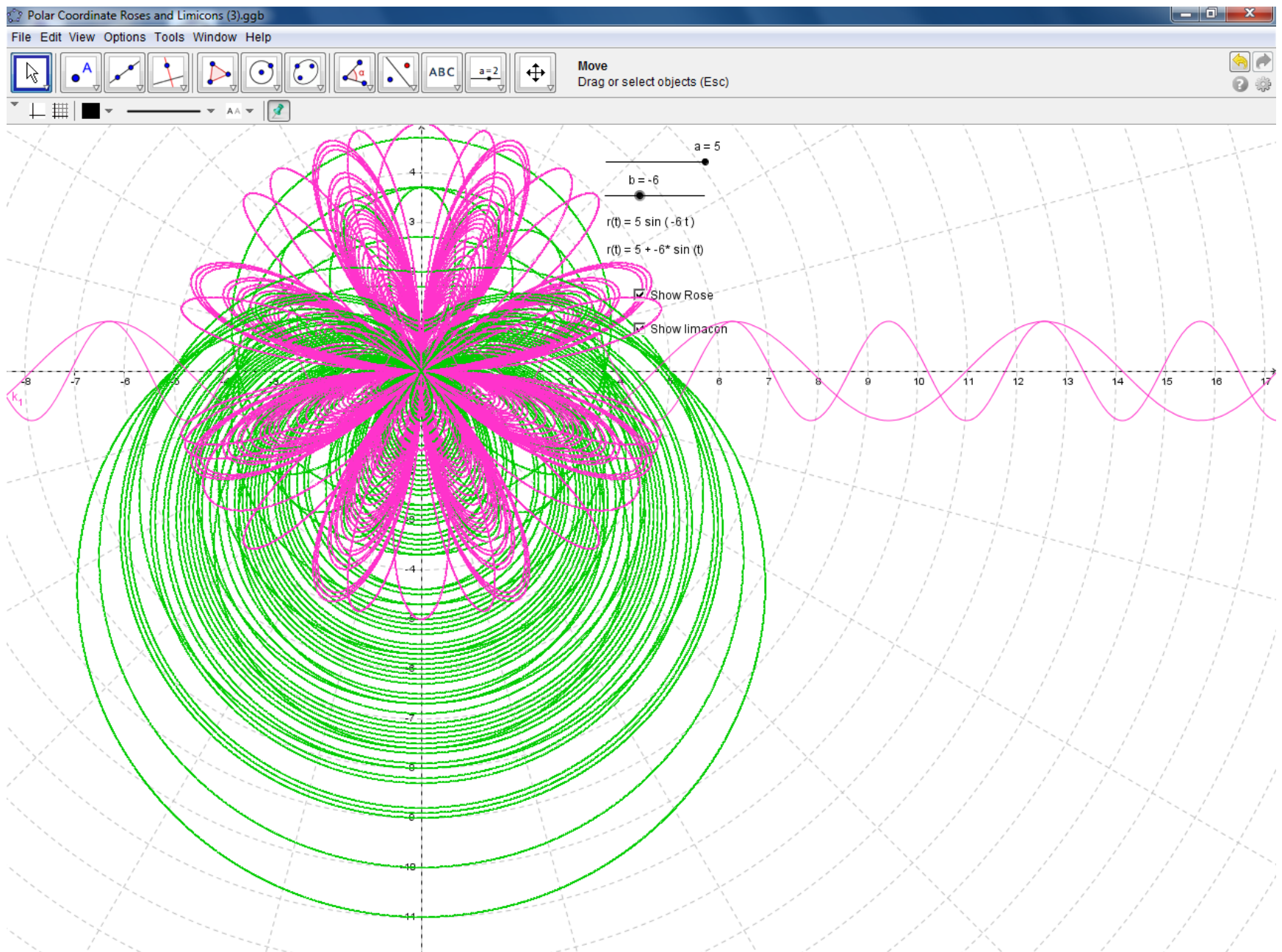


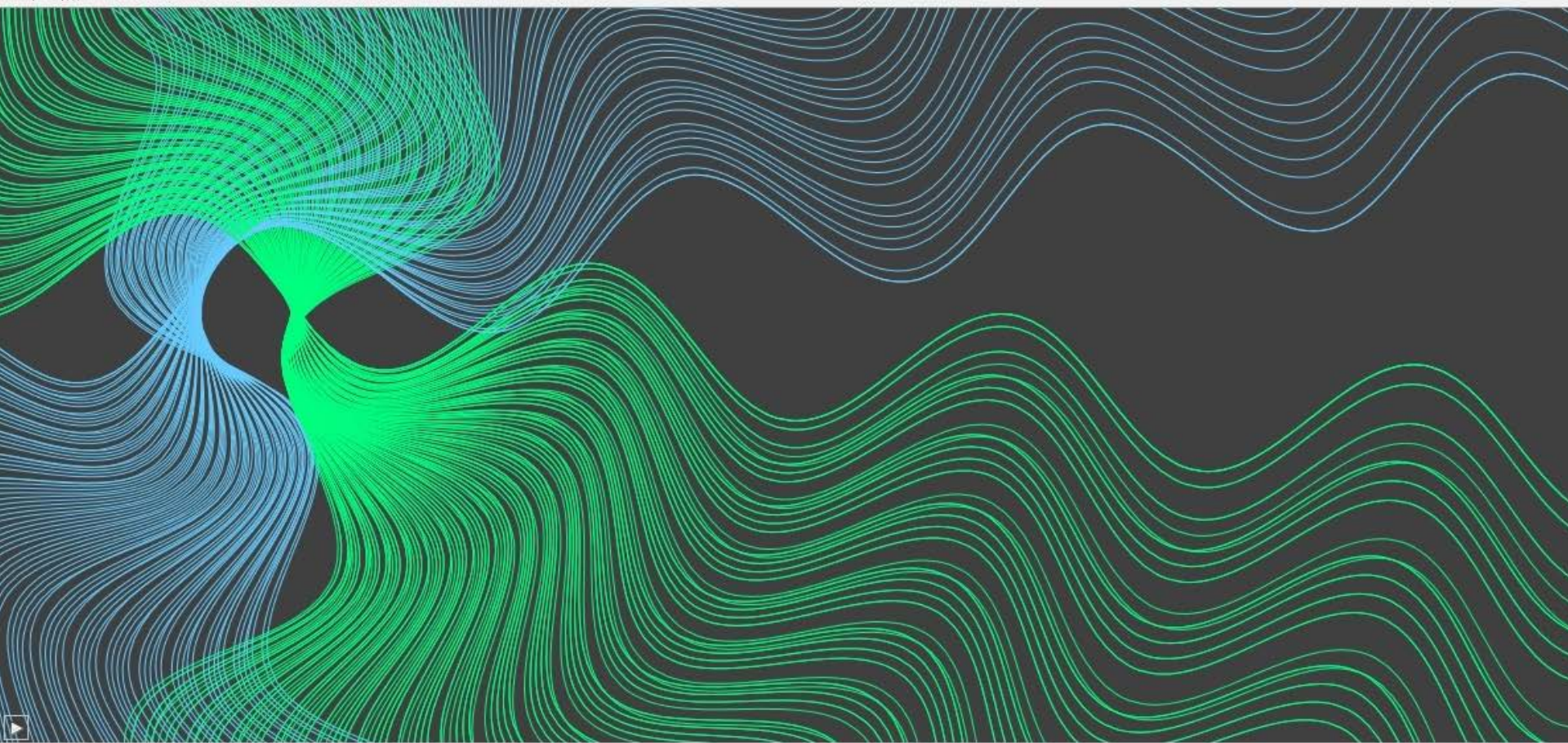


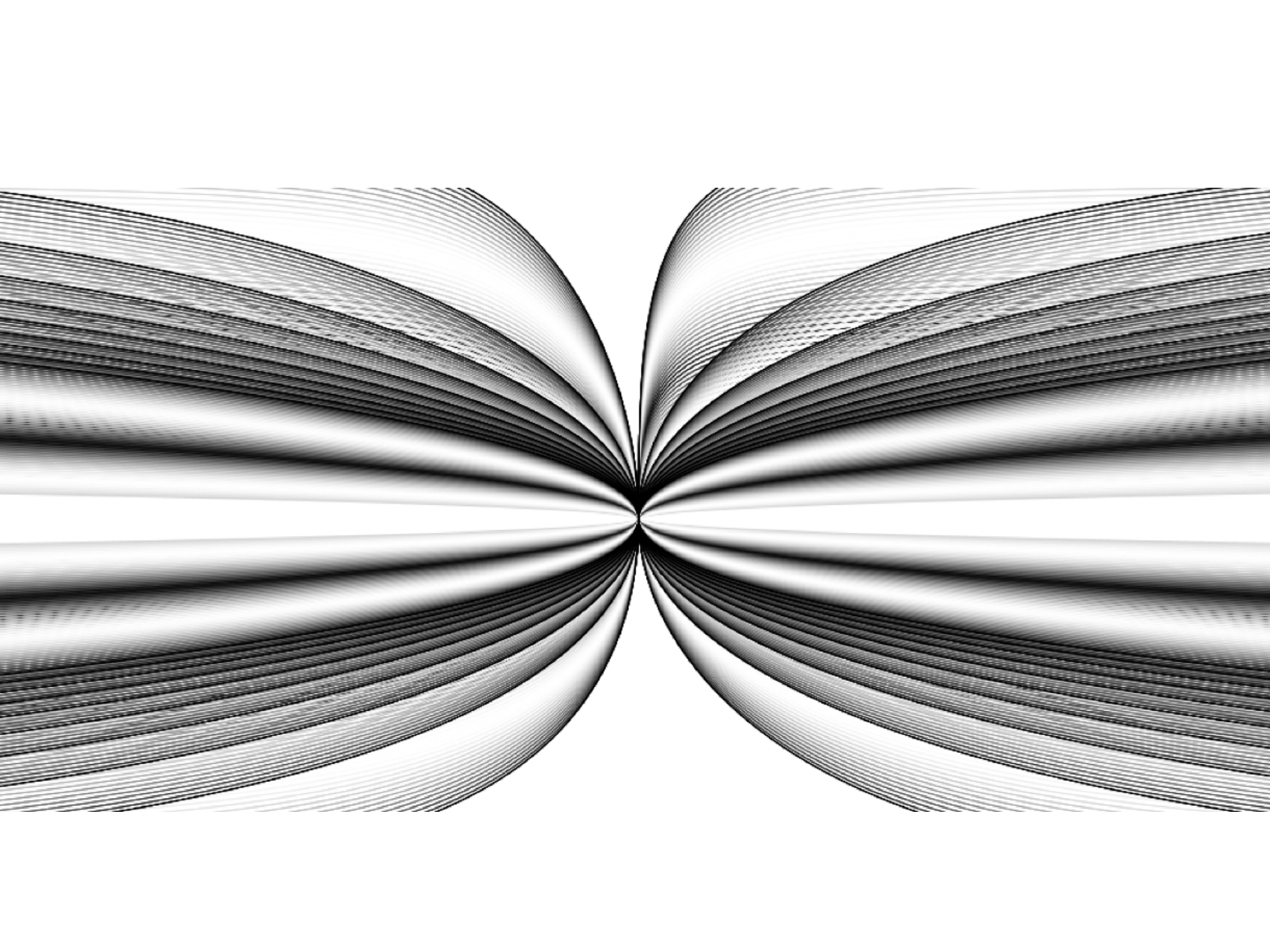
In polar : $(\cos^5(6\theta) + S, \theta)$
 Inputs: $\theta = 0$ to 2π , $S = 1, 3$, and -2

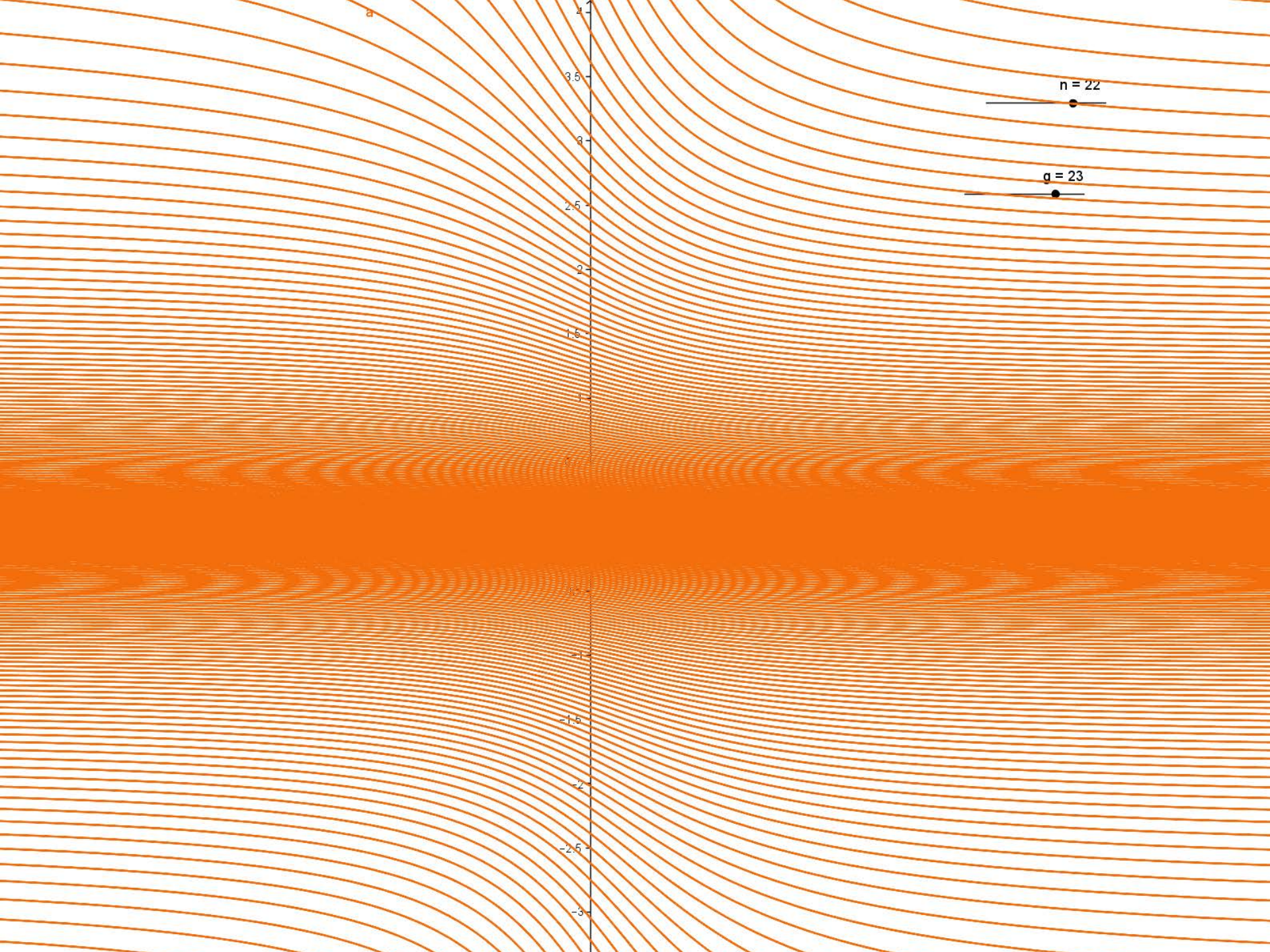
Background polygons
 added for visual
 interest.







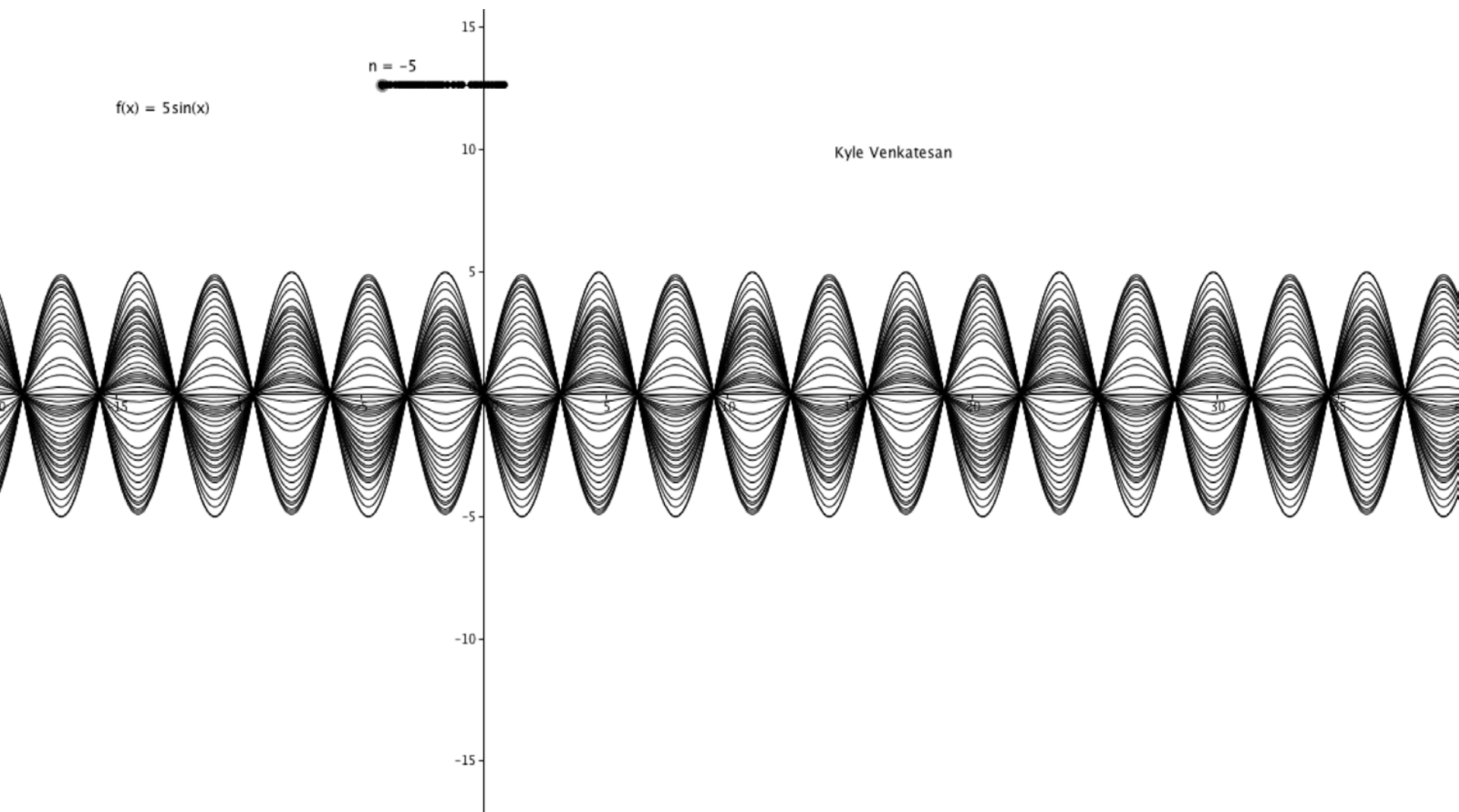


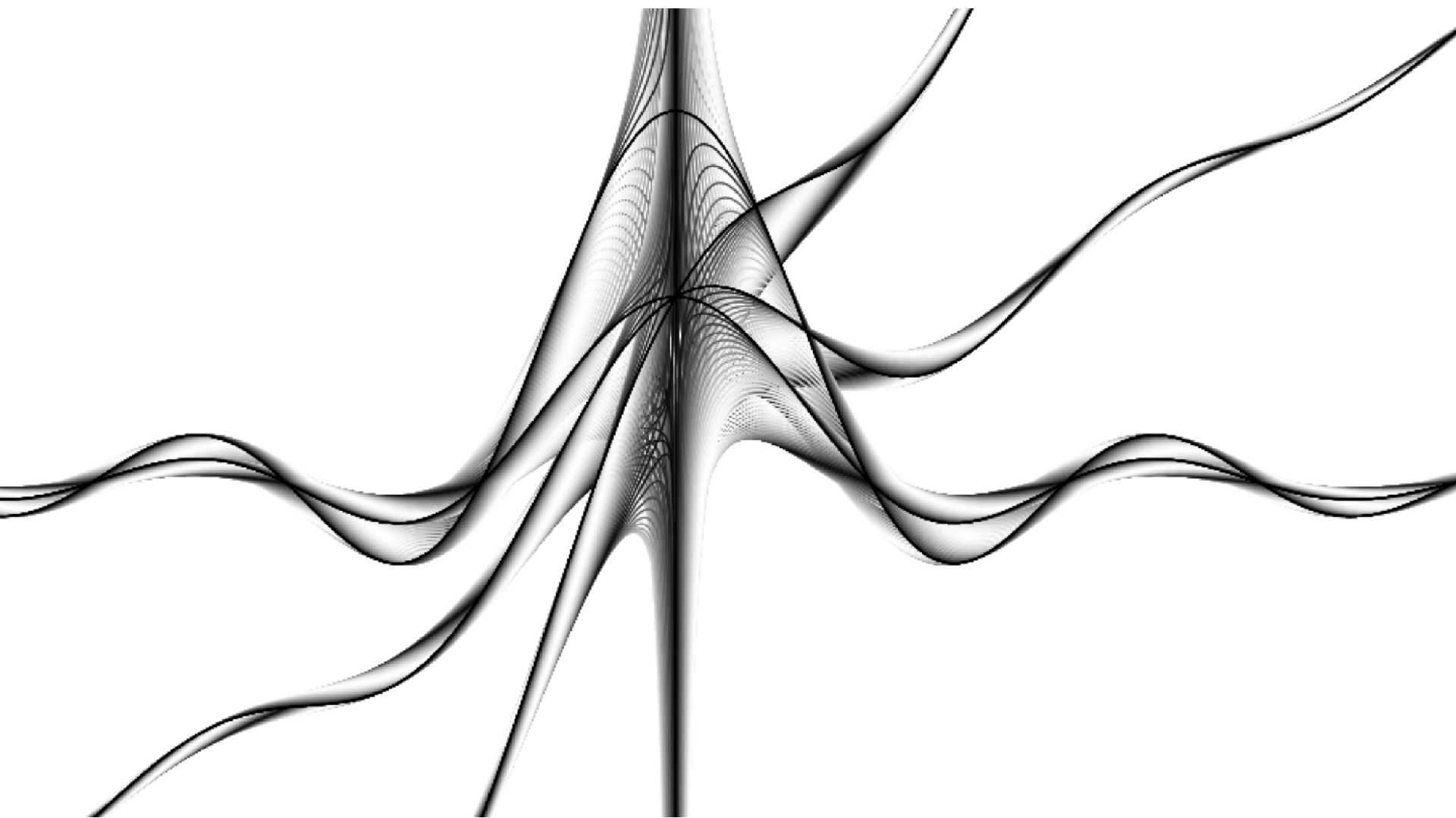


$$f(x) = 5 \sin(x)$$

$n = -5$

Kyle Venkatesan







Algebra

Function

$f(x) = 5$

Number

$a = 5$

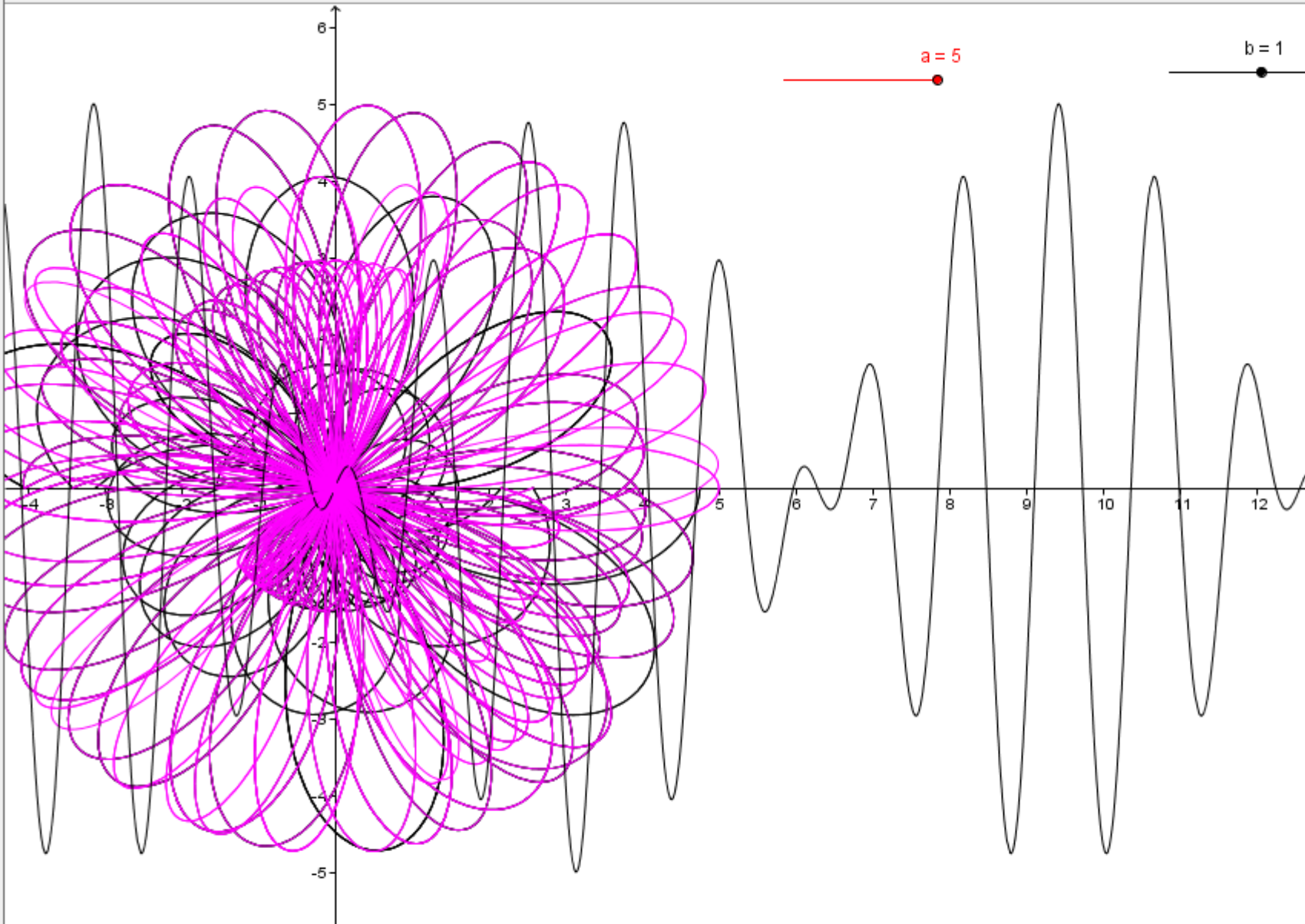
$b = 1$

Parametric Cu

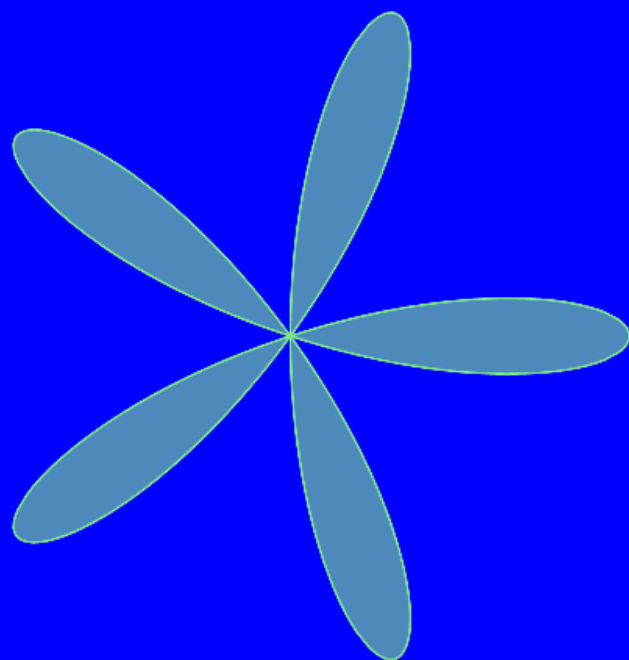
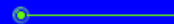
$x = t$

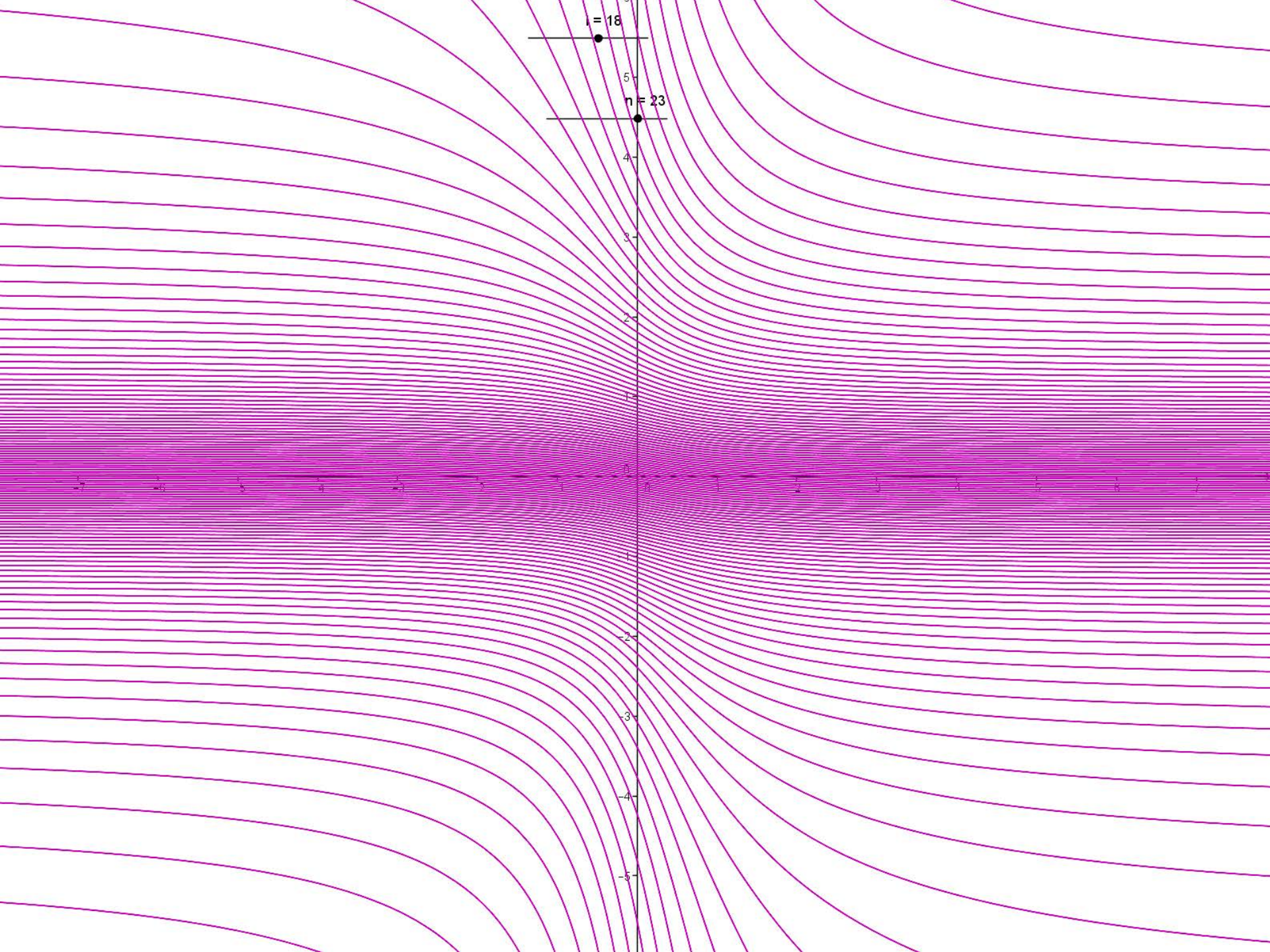
$y = t$

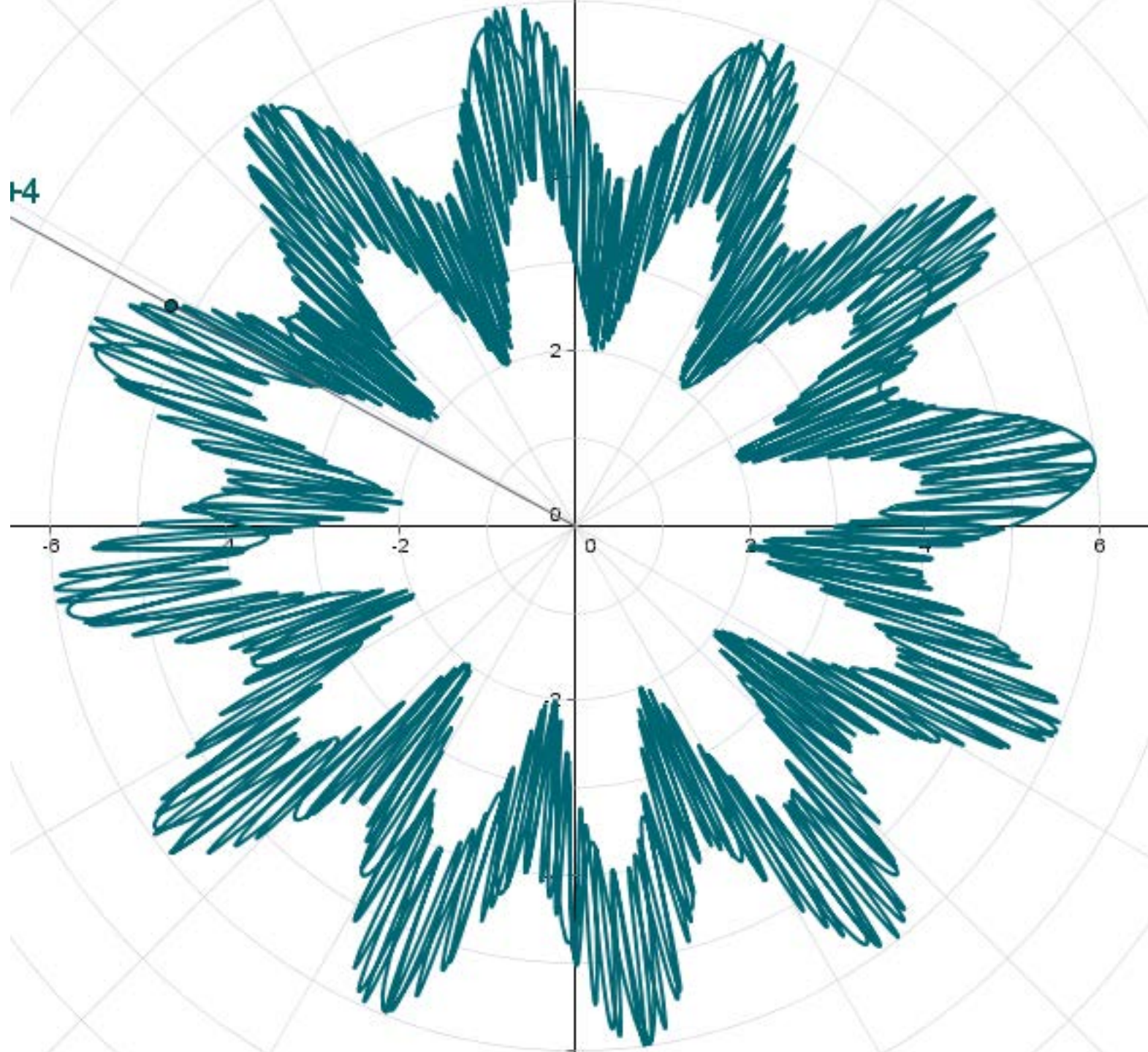
Graphics

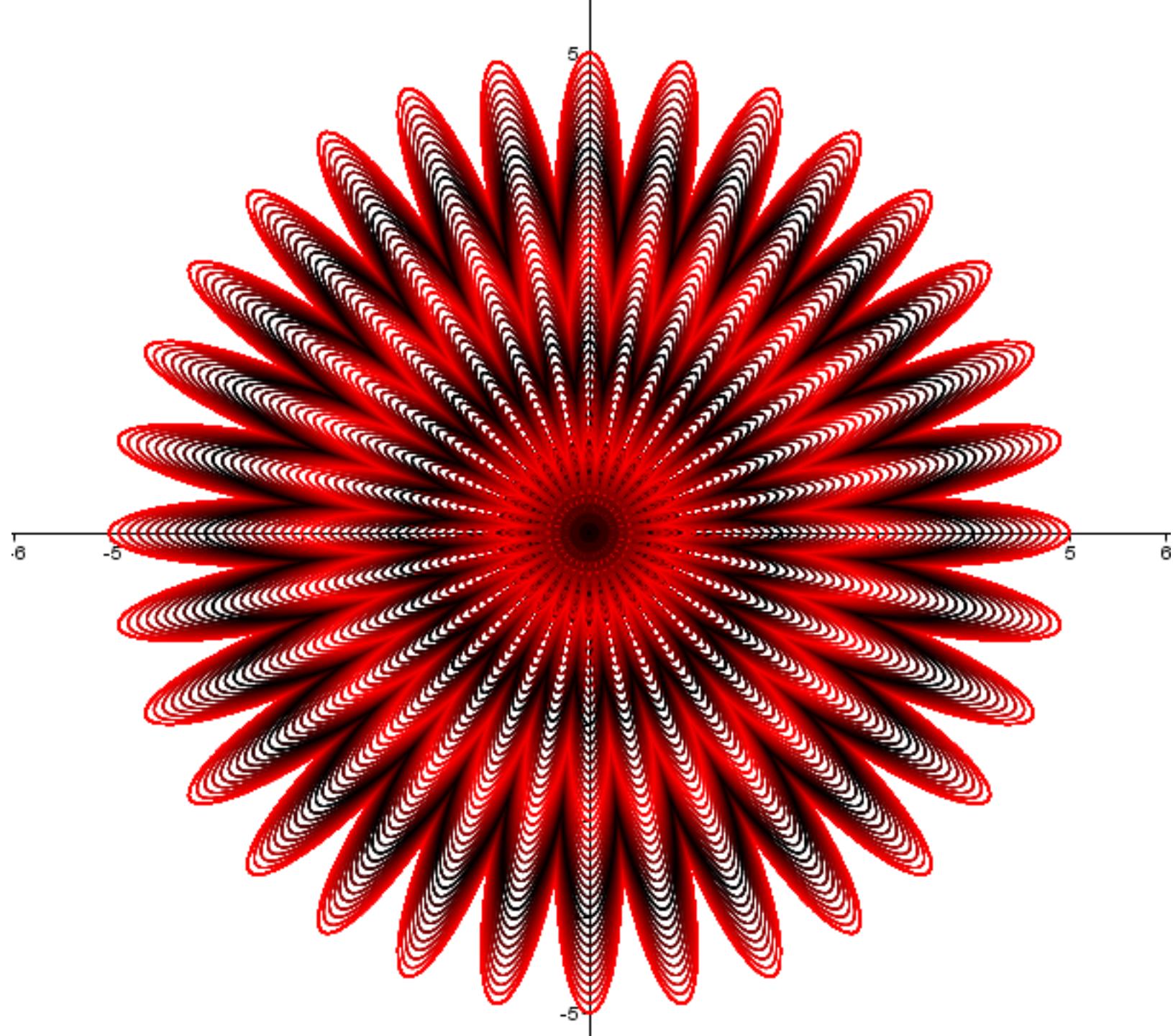


$$b = -5$$







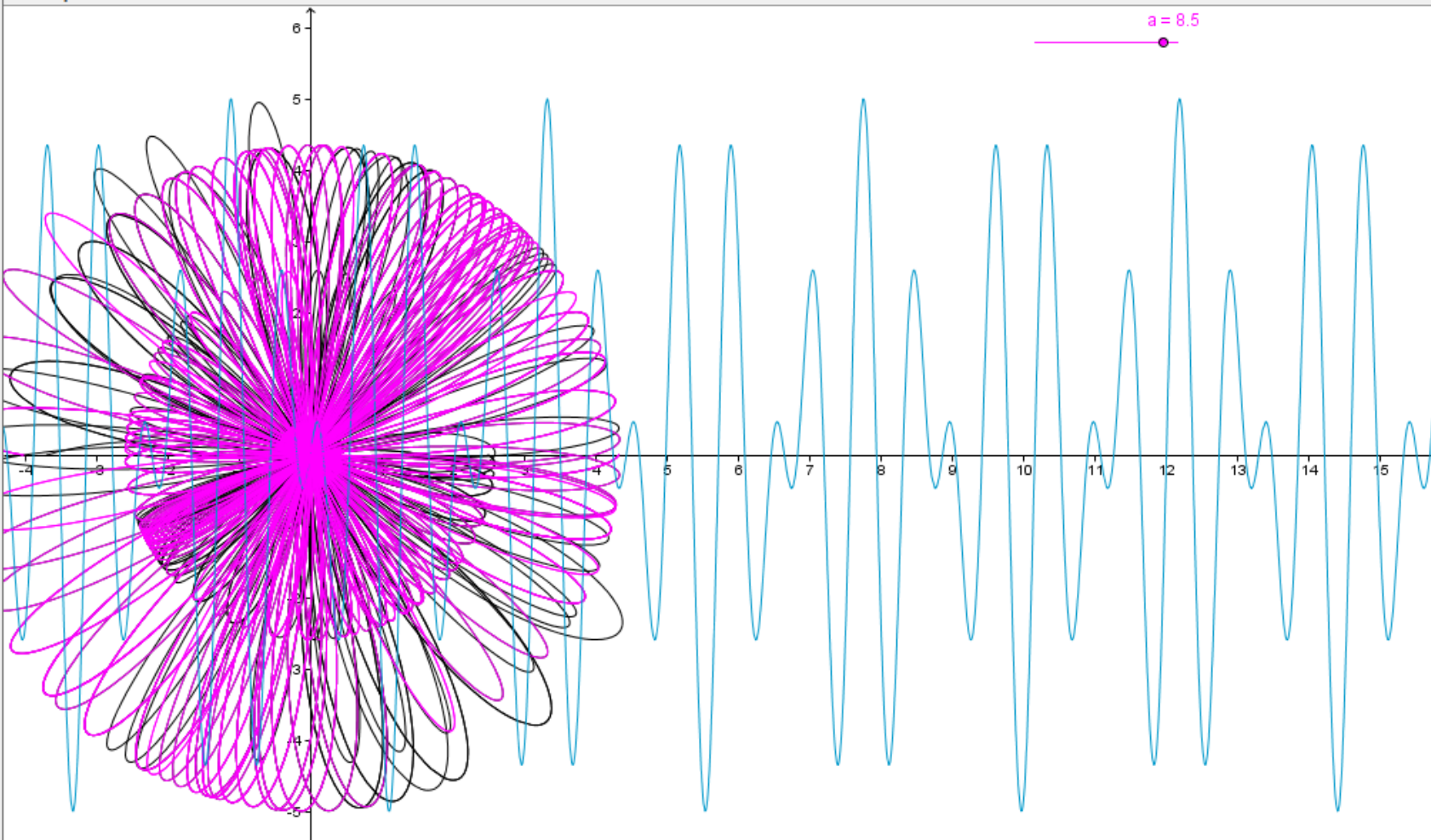


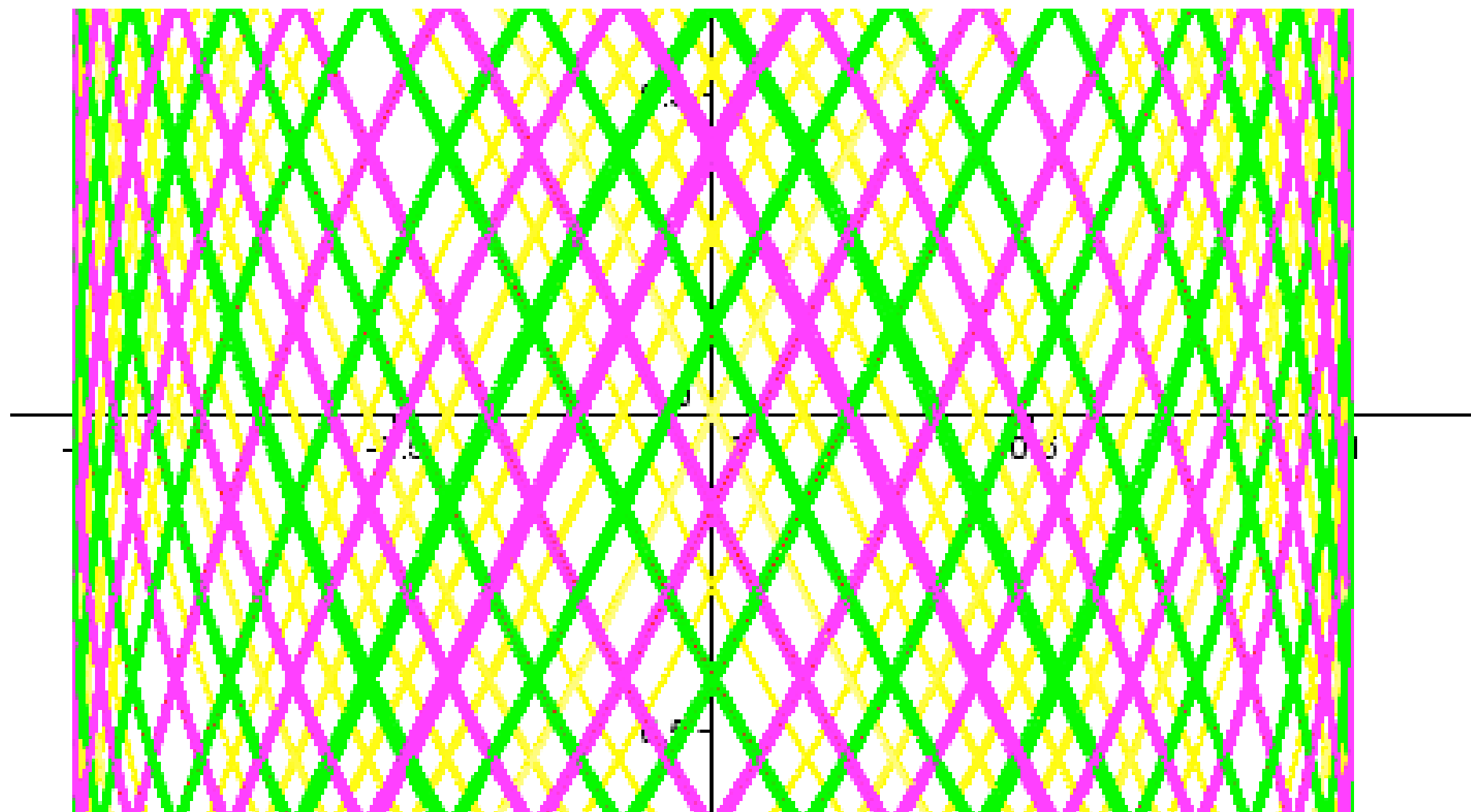


Graphics

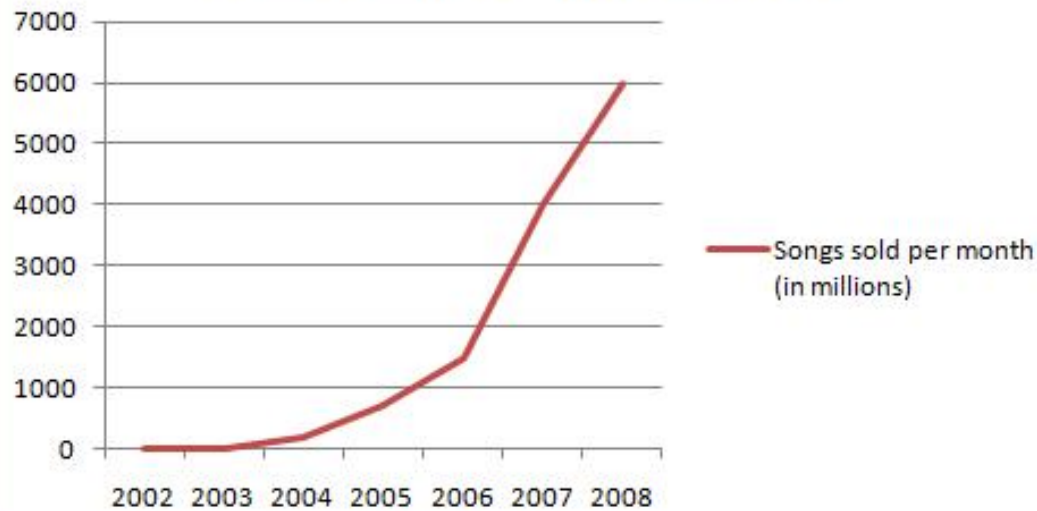
$$\cos(8.5x) \sin\left(\frac{8.5}{6}x\right)$$

$$\left. \begin{matrix} \cos(t) \\ \sin(t) \end{matrix} \right\} 0 \leq t \leq 1$$

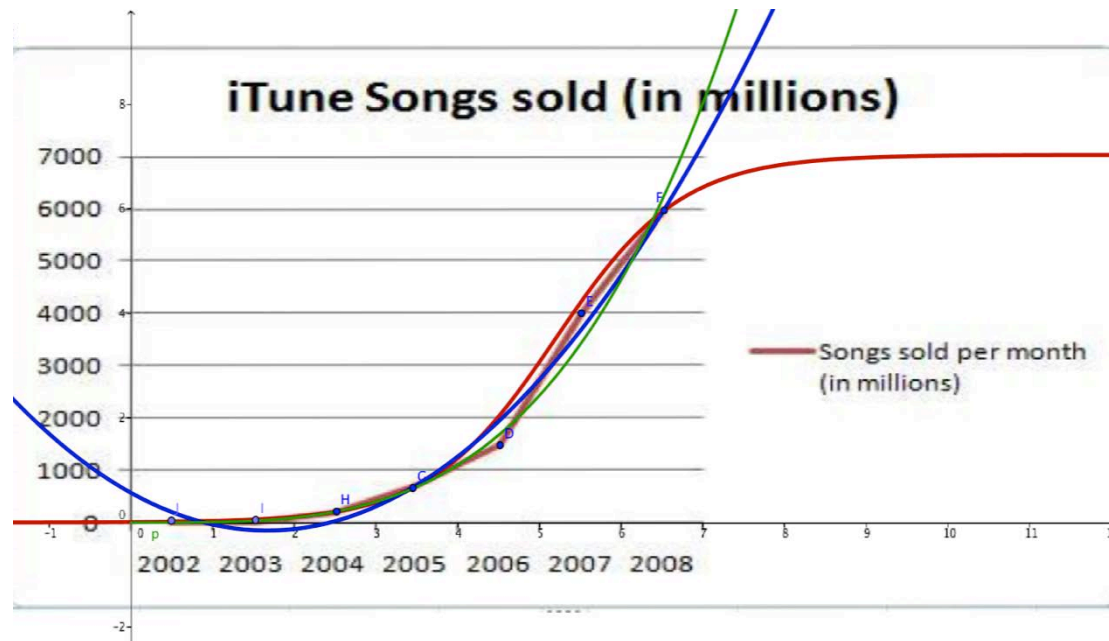




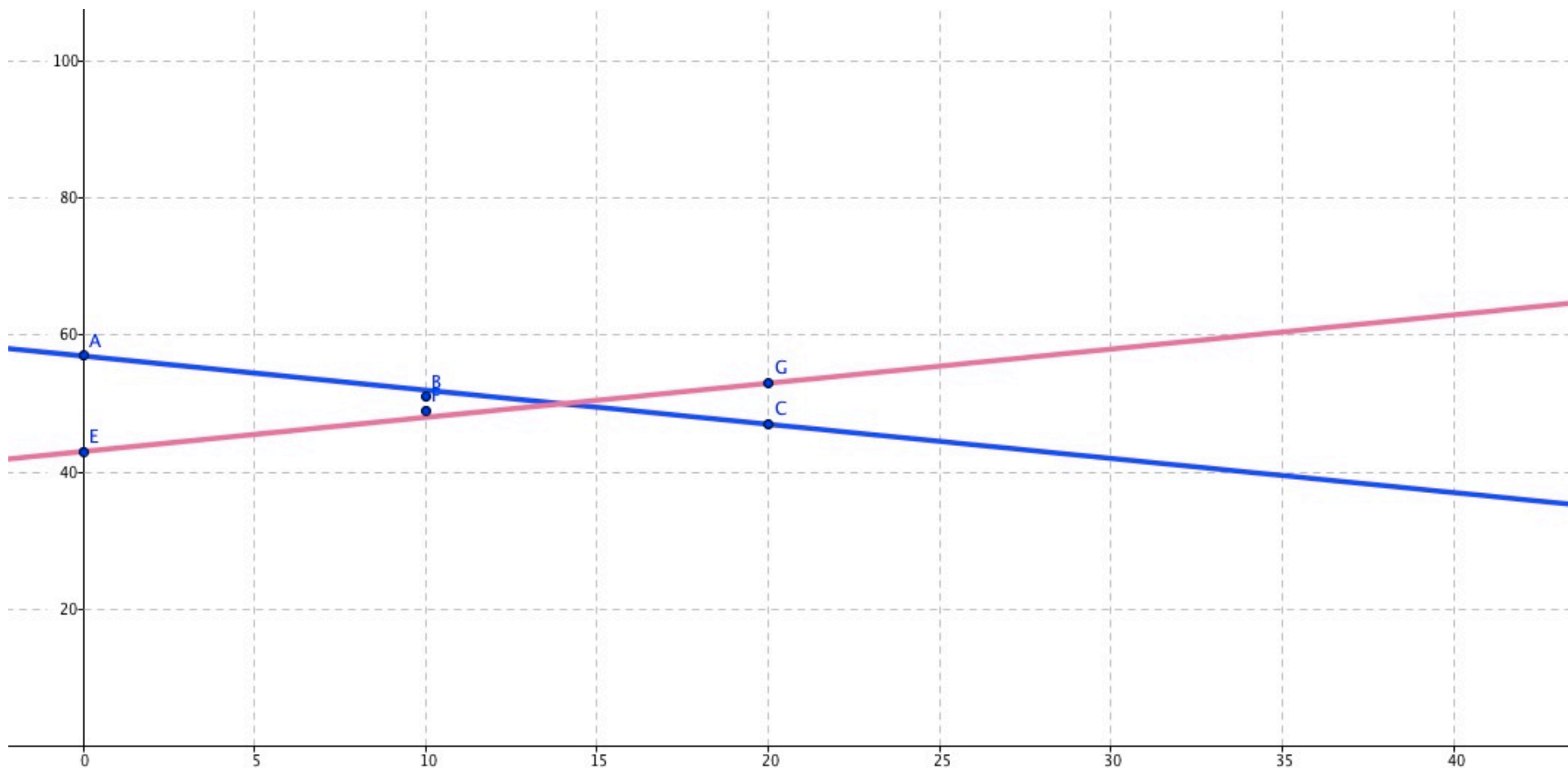
iTunes Songs sold (in millions)

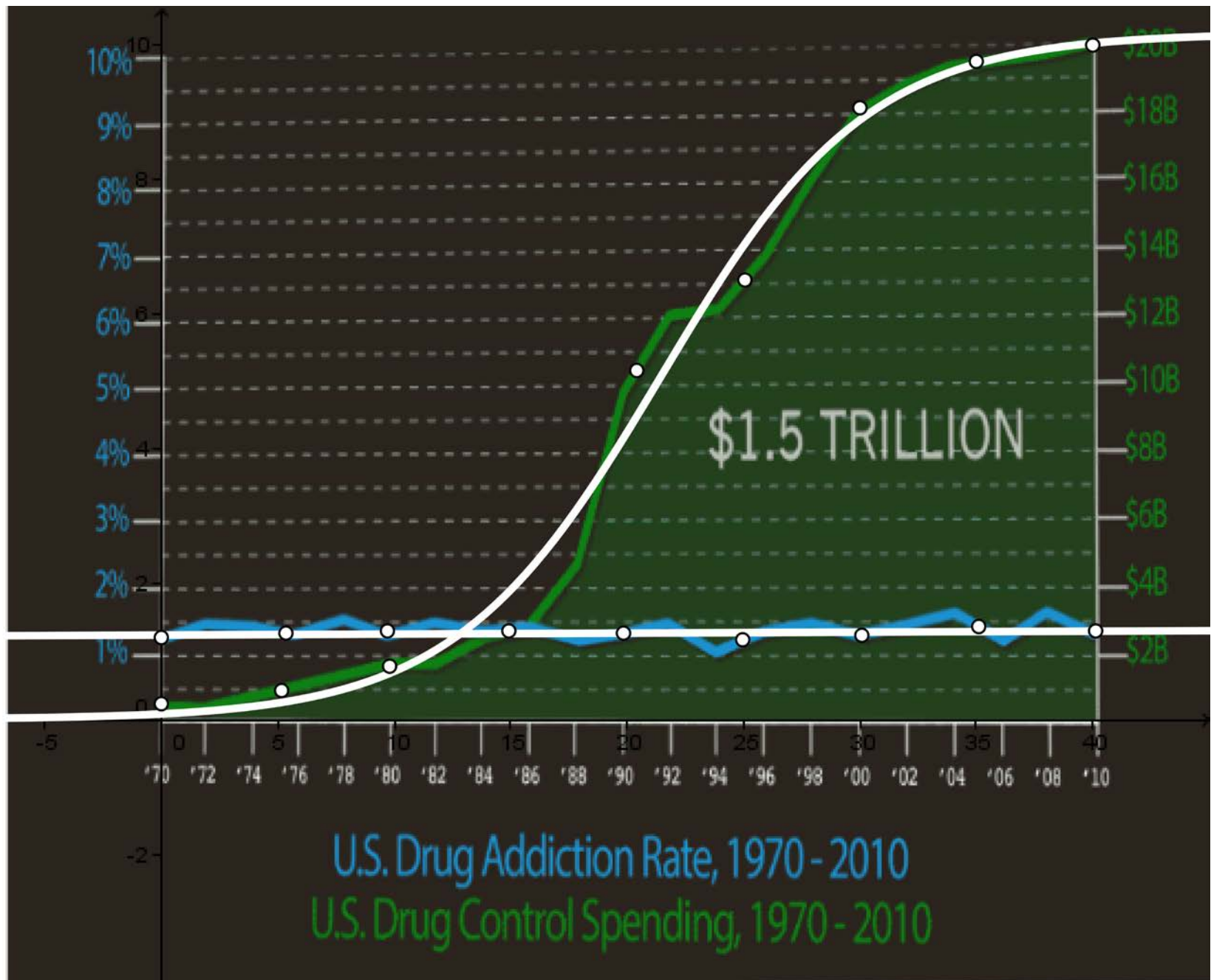


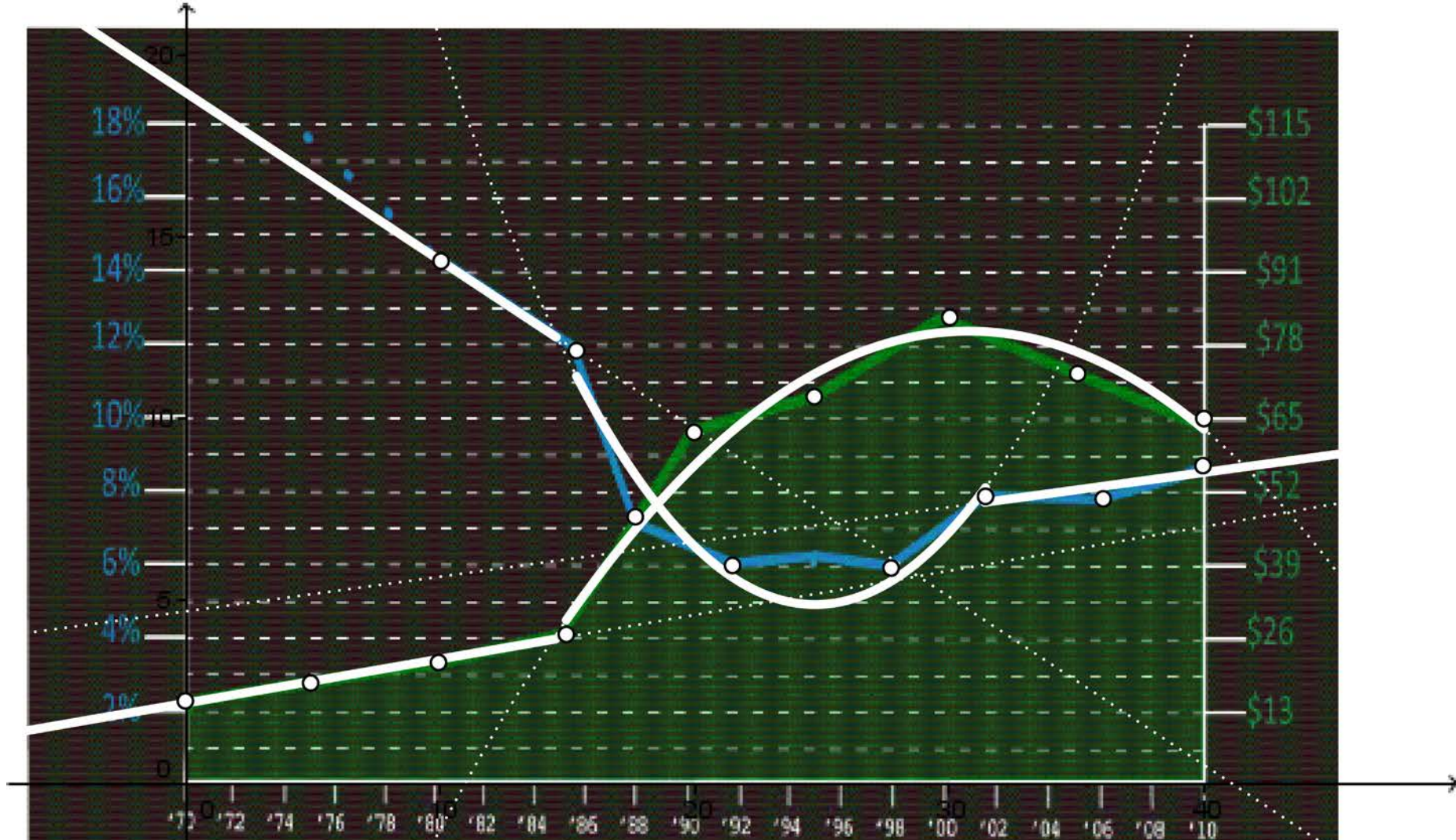
iTunes Songs sold (in millions)



College Graduates by gender after 1970





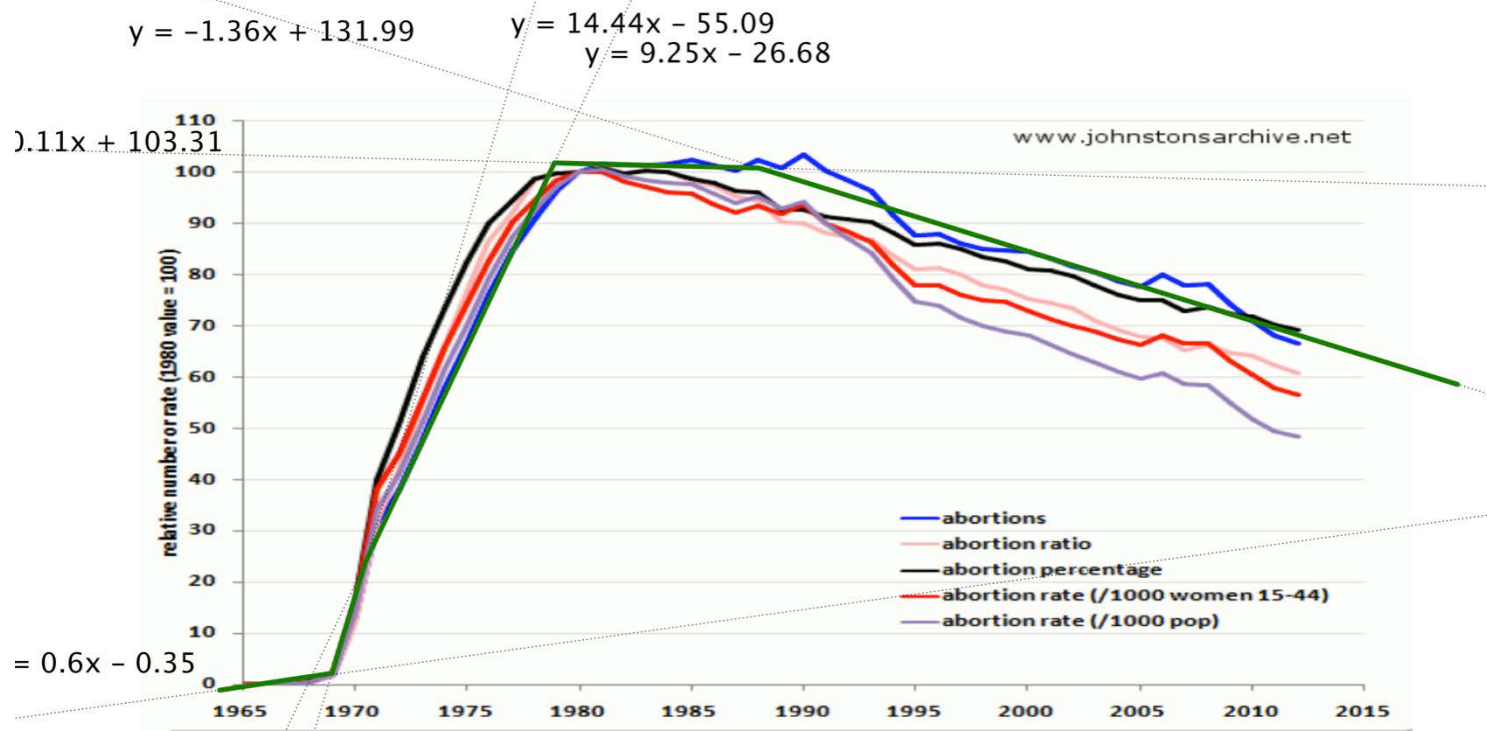


U.S. Illegal Drug Usage Rate, 1970-2010

U.S. Drug Control Spending per capita, in 2010 dollars, 1970-2010

Sources : US Census 2010, bls.gov inflation calculator

Us Department of Health, National survey on Drug use and health



A



Using GeoGebra to to teach

Choose a topic. I'll make a regression.

- U.S. or World Population graph
- High School Graduation Rate graph
- U.S. Student Debt graph
- Unicorns and Rainbows graph
- Other topic?

Hopes for the future:

extending use of free technology

- In-class student use of technology (GeoGebra, WebWork, Excel, free on line text-books, etc.) is limited.
- Rock Creek campus has computer terminals for all math classes level 100 and above
- Tablets are a possible alternative
 - Sets that remain in classrooms
 - Or tablets purchased by each student