The Complex plane frame of reference is an Even function.

Shaimaa Soltan

$$\ln(i) = \frac{\pi}{2} * i \quad and \quad \frac{1}{i} = -i \quad and \quad -\frac{1}{i} = i \rightarrow (A)$$

X	$\ln\left(i * X - \frac{X}{i}\right)$	$= \ln(2 * i * X)$	$= \ln(2 * X) + \ln(i)$	$= \ln(2) + \ln(i * X)$
0	1	1	1	-∞
1	$\ln\left(i - \frac{1}{i}\right)$	$= \ln(2 * i)$	$= \ln(2) + \ln(i)$	$= \ln(2) + \ln(i)$
2	$\ln\left(2 * i - \frac{2}{i}\right)$	$= \ln(4 * i)$	$= \ln(4) + \ln(i)$	$= \ln(2) + \ln(i * 2)$
3	$\ln\left(3 * i - \frac{3}{i}\right)$	$= \ln(6 * i)$	$= \ln(6) + \ln(i)$	$= \ln(2) + \ln(i * 3)$
4	$\ln\left(4 * i - \frac{4}{i}\right)$	$= \ln(8 * i)$	$= \ln(8) + \ln(i)$	$= \ln(2) + \ln(i * 4)$
5	$\ln\left(5 * i - \frac{5}{i}\right)$	$= \ln(10 * i)$	$= \ln(10) + \ln(i)$	$= \ln(2) + \ln(i * 5)$
6	$\ln\left(6 * i - \frac{6}{i}\right)$	$= \ln(12 * i)$	$= \ln(10) + \ln(i)$	$= \ln(2) + \ln(i * 5)$
…	…	…	…	…
…				

AT X = -X

-X	$\ln\left(i * -1 * X - \frac{-1 * X}{i}\right) = \ln\left(\frac{X}{i} + \frac{X}{i}\right)$	$= \ln\left(\frac{2 * X}{i}\right)$	$= \ln(2 * X) - \ln(i)$	$= \ln(2) + \ln(X) - \ln(i)$
-1	$\ln\left(\frac{1}{i} + \frac{1}{i}\right)$	$= \ln\left(\frac{2}{i}\right)$	$= \ln(2) - \ln(i)$	$= \ln(2) + \ln(1) - \ln(i)$
-2	$\ln\left(\frac{2}{i} + \frac{2}{i}\right)$	$= \ln\left(\frac{4}{i}\right)$	$= \ln(4) - \ln(i)$	$= \ln(2) + \ln(2) - \ln(i)$
-3	$\ln\left(\frac{3}{i} + \frac{3}{i}\right)$	$= \ln\left(\frac{6}{i}\right)$	$= \ln(6) - \ln(i)$	$= \ln(2) + \ln(3) - \ln(i)$
-4	$\ln\left(\frac{4}{i} + \frac{4}{i}\right)$	$= \ln\left(\frac{8}{i}\right)$	$= \ln(8) - \ln(i)$	$= \ln(2) + \ln(4) - \ln(i)$
-5	$\ln\left(\frac{5}{i} + \frac{5}{i}\right)$	$= \ln\left(\frac{10}{i}\right)$	$= \ln(10) - \ln(i)$	$= \ln(2) + \ln(5) - \ln(i)$
-6	$\ln\left(\frac{6}{i} + \frac{6}{i}\right)$	$= \ln\left(\frac{12}{i}\right)$	$= \ln(12) - \ln(i)$	$= \ln(2) + \ln(6) - \ln(i)$
-7	$\ln\left(\frac{7}{i} + \frac{7}{i}\right)$	$= \ln\left(\frac{14}{i}\right)$	$= \ln(14) - \ln(i)$	$= \ln(2) + \ln(7) - \ln(i)$
…	…	…	…	…
…				

Therefore. $\ln(2 * X) = \ln\left(i * \ -1 * X - \frac{-1*X}{i}\right) + \ln(i)$ ➔(1)

$$\ln(2 * X) = \ln\left(i * X - \frac{X}{i}\right) - \ln(i) \text{ ➔}(2)$$

$$\ln(2 * X) = \ln\left(i * \ -1 * X - \frac{-1 * X}{i}\right) + \frac{\pi}{2} * i \text{ ➔}(1)$$

$$\ln(2 * X) = \ln\left(i * X - \frac{X}{i}\right) - \frac{\pi}{2} * i \text{ ➔}(2)$$

Taking the exponent with base = [e]

$$2 * X = e^{\ln\left(\frac{X}{i} - i*X\right) + \frac{\pi}{2}*i} \text{ ➔}(1)$$

$$X = \frac{1}{2} * \ e^{\ln\left(\frac{X}{i} - i*X\right) + \frac{\pi}{2}*i} \text{ ➔}(1)$$

$$2 * X = e^{\ln\left(i*X - \frac{X}{i}\right) - \frac{\pi}{2}*i} \text{ ➔}(2)$$

$$X = \frac{1}{2} * e^{\ln\left(i*X - \frac{X}{i}\right) - \frac{\pi}{2}*i} \text{ ➔}(2)$$

$$X = \frac{1}{2} * \left(\frac{X}{i} - \ i * X\right) * \ e^{\frac{\pi}{2}*i} \text{ ➔}(B)$$

$$X = \frac{1}{2} * \left(i * X - \frac{X}{i}\right) * e^{-\frac{\pi}{2}*i} \text{ ➔}(C)$$

X	$X = \frac{1}{2} * \left(\frac{X}{i} - \ i * X\right) * \ e^{\frac{\pi}{2}*i}$	$\frac{1}{2} * \left(i * X - \frac{X}{i}\right) * e^{-\frac{\pi}{2}*i}$
….	…	….
-4	$-4 = \frac{1}{2} * \left(-\frac{4}{i} + \ 4 * i\right) * e^{-\frac{\pi}{2}*i}$	$-4 = \frac{1}{2} * \left(-4 * i + \frac{4}{i}\right) * e^{-\frac{\pi}{2}*i}$
-3	$-3 = \frac{1}{2} * \left(-\frac{3}{i} + \ 3 * i\right) * e^{-\frac{\pi}{2}*i}$	$-3 = \frac{1}{2} * \left(-3 * i + \frac{3}{i}\right) * e^{-\frac{\pi}{2}*i}$
-2	$-2 = \frac{1}{2} * \left(\frac{-2}{i} + 2 * \ i\right) * \ e^{\frac{\pi}{2}*i}$	$-2 = \frac{1}{2} * \left(-2 * i + \frac{2}{i}\right) * e^{-\frac{\pi}{2}*i}$
-1	$-1 = \frac{1}{2} * \left(\frac{-1}{i} + \ i\right) * \ e^{\frac{\pi}{2}*i}$	$-1 = \frac{1}{2} * \left(-i + \frac{1}{i}\right) * e^{-\frac{\pi}{2}*i}$
0	0	0
1	$1 = \frac{1}{2} * \left(\frac{1}{i} - \ i\right) * \ e^{\frac{\pi}{2}*i}$	$1 = \frac{1}{2} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2}*i}$
2	$2 = \frac{1}{2} * \left(\frac{2}{i} - 2 * \ i\right) * \ e^{\frac{\pi}{2}*i}$	$2 = \frac{1}{2} * \left(2 * i - \frac{2}{i}\right) * e^{-\frac{\pi}{2}*i}$
3	$3 = \frac{1}{2} * \left(\frac{3}{i} - 3 * \ i\right) * \ e^{\frac{\pi}{2}*i}$	$3 = \frac{1}{2} * \left(3 * i - \frac{3}{i}\right) * e^{-\frac{\pi}{2}*i}$
4	$4 = \frac{1}{2} * \left(\frac{4}{i} - 4 * \ i\right) * \ e^{\frac{\pi}{2}*i}$	$4 = \frac{1}{2} * \left(4 * i - \frac{4}{i}\right) * e^{-\frac{\pi}{2}*i}$

5	$5 = \frac{1}{2} * \left(\frac{5}{i} - 5 * \ i\right) * \ e^{\frac{\pi}{2}*i}$	$5 = \frac{1}{2} * \left(5 * i - \frac{5}{i}\right) * e^{-\frac{\pi}{2}*i}$
6	$6 = \frac{1}{2} * \left(\frac{6}{i} - 6 * \ i\right) * \ e^{\frac{\pi}{2}*i}$	$6 = \frac{1}{2} * \left(6 * i - \frac{6}{i}\right) * e^{-\frac{\pi}{2}*i}$
…	…	…
…		

$$X = \frac{1}{2} * \left(\frac{X}{i} - \ i * X\right) * \ e^{\frac{\pi}{2}*i} = \frac{1}{2} * \ e^{\frac{\pi}{2}*i + \ln\left(\frac{X}{i} - \ i*X\right)} \rightarrow (B)$$

$$X = \frac{1}{2} * \left(i * X - \frac{X}{i}\right) * e^{-\frac{\pi}{2}*i} = \frac{1}{2} * \ e^{ln\left(i*X - \frac{X}{i}\right) - \frac{\pi}{2}*i} \rightarrow (C)$$

Therefore

$$f(X) = \ X = \frac{1}{2} * \left(\frac{X}{i} - \ i * X\right) * \ e^{\frac{\pi}{2}*i} = \frac{1}{2} * \ e^{\frac{\pi}{2}*i + \ln\left(\frac{X}{i} - \ i*X\right)} \rightarrow (B)$$

$$f(X) = \ X = \frac{1}{2} * \left(i * X - \frac{X}{i}\right) * e^{-\frac{\pi}{2}*i} = \frac{1}{2} * \ e^{ln\left(i*X - \frac{X}{i}\right) - \frac{\pi}{2}*i} \rightarrow (C)$$

And if

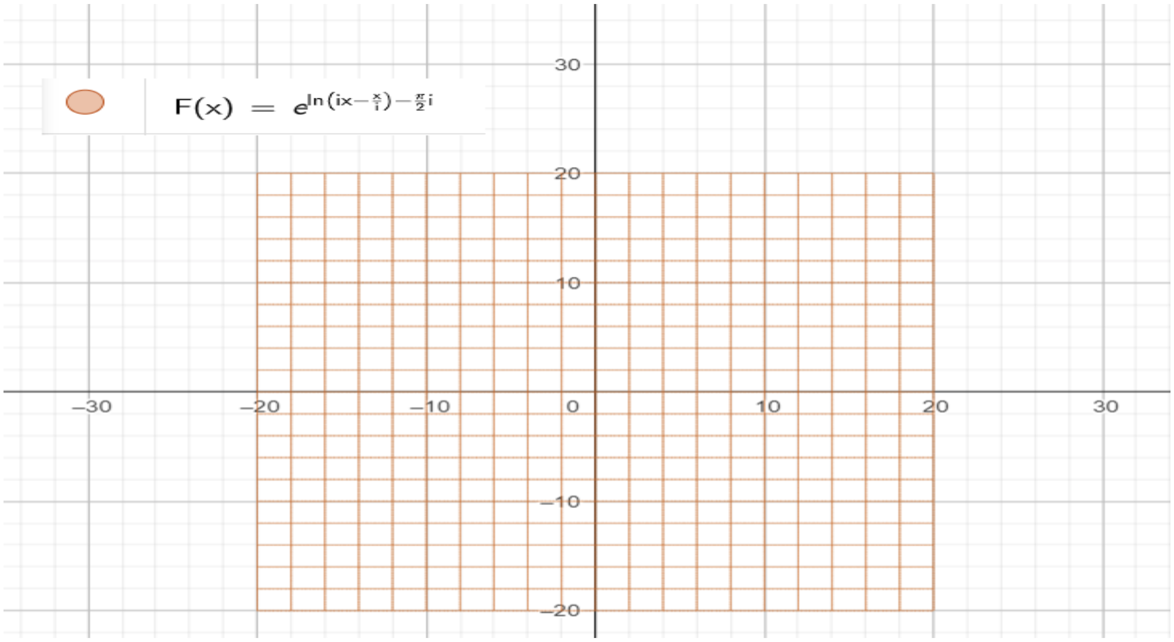
$$f(X) = \ X \ this \ means \ for \ each \ X \ we \ will \ have \ Zero \ value \ for \ Y$$

$$f(2 * X) = \ 2 * X = \left(\frac{X}{i} - \ i * X\right) * \ e^{\frac{\pi}{2}*i} = \ e^{\frac{\pi}{2}*i + \ln\left(\frac{X}{i} - \ i*X\right)} \rightarrow (D)$$

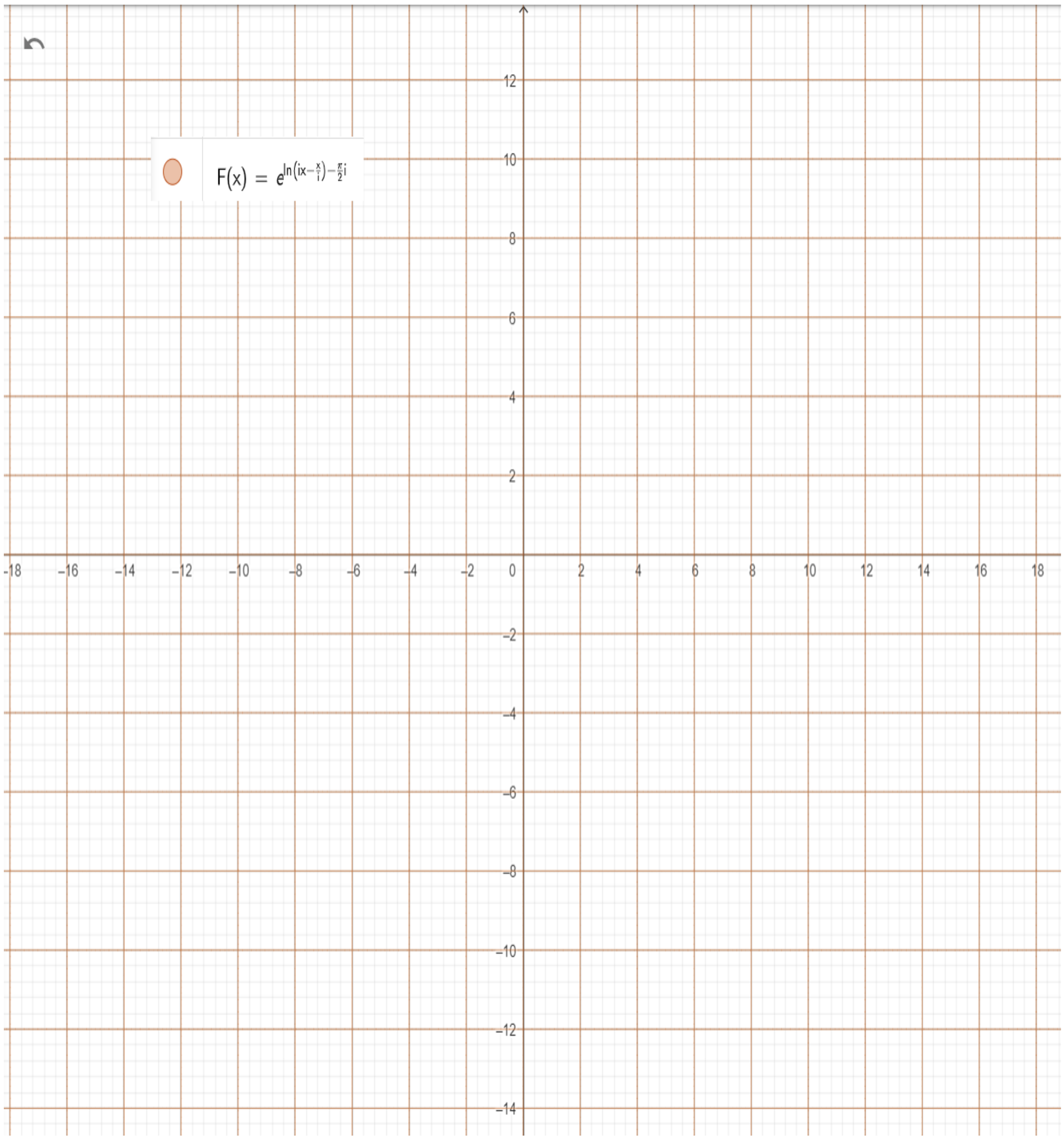
$$f(2 * X) = 2 * \ X = \left(i * X - \frac{X}{i}\right) * e^{-\frac{\pi}{2}*i} = \ e^{ln\left(i*X - \frac{X}{i}\right) - \frac{\pi}{2}*i} \rightarrow (E)$$

This is function is an even function and all its Zeros are Even numbers for any natural number X.

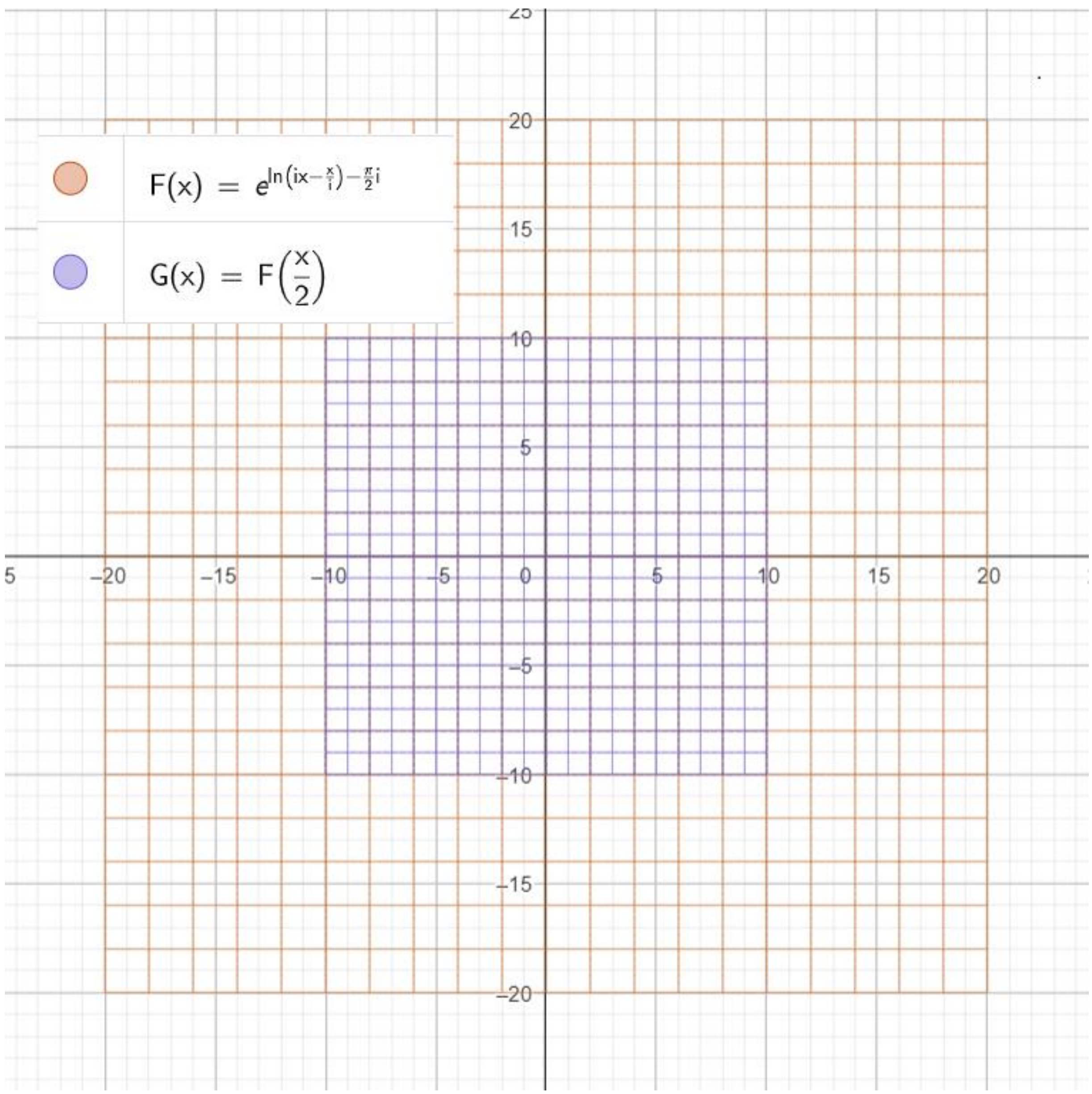
And it is 2 * complex plane frame of reference.



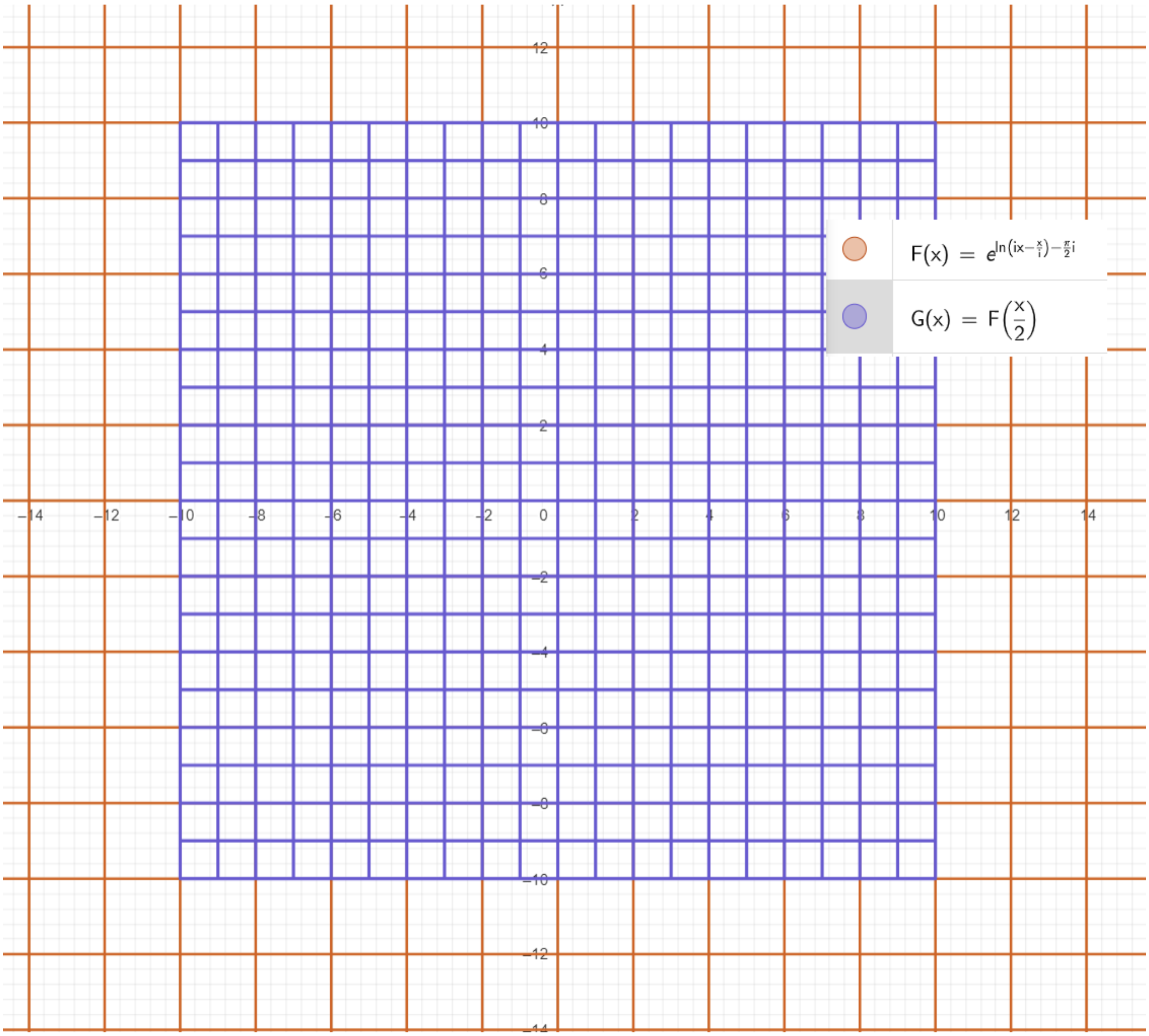
Even Function all its Zero are even numbers only.



In F(X) let X =X/2 we get the exact complex plane frame of reference, and we get Odd Zeros from an Even function



Replace X by X/2 we get the original complex plane frame of reference (i * X) and even and odd Zeros.

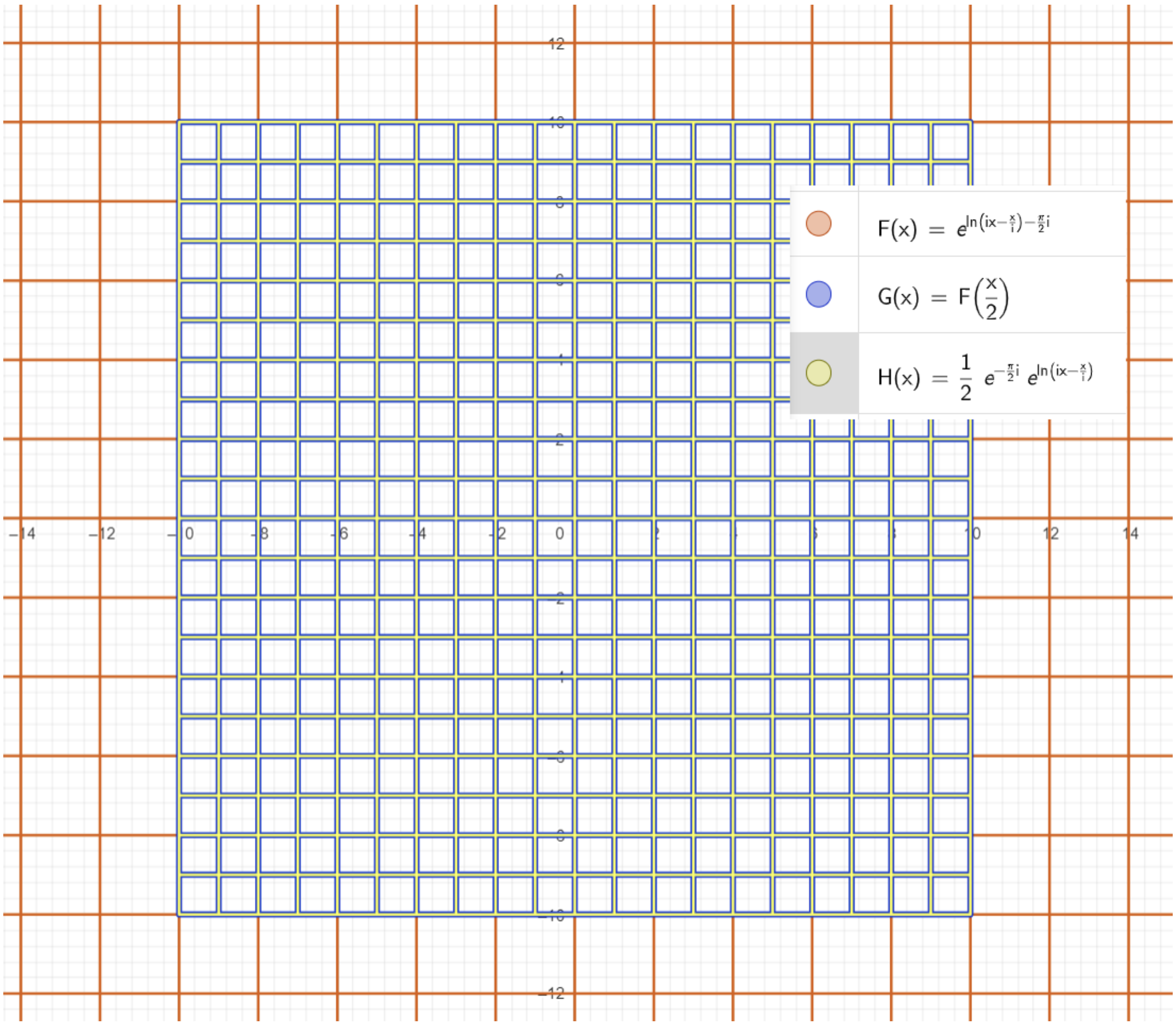


$$f\left(2 * \frac{X}{2}\right) = 2 * \frac{X}{2} = e^{\frac{\pi}{2} * i + \ln\left(\frac{X}{2 * i} - i * \frac{X}{2}\right)} = \frac{1}{2} * e^{\frac{\pi}{2} * i + \ln\left(\frac{X}{i} - i * X\right)} \rightarrow (B)$$

$$f(X) = X = e^{\frac{\pi}{2} * i + \ln\left(\frac{X}{2 * i} - i * \frac{X}{2}\right)} = \frac{1}{2} * e^{\frac{\pi}{2} * i + \ln\left(\frac{X}{i} - i * X\right)} \rightarrow (B)$$

$$f(X) = X = \frac{1}{2} * e^{ln\left(i * X - \frac{X}{i}\right) - \frac{\pi}{2} * i} \rightarrow (C)$$

And this what the analytical continuity did by multiplying by ½ ; that converted the complex plane even function into and odd function (i * X) and showed all odd numbers zeros as well!



As these even function F(X) is the frame of reference for the complex plane which = (i * X)

Then in Euler's Identity we can write it with F(X) instead of use (i * X)

Therefore!

$$f(X) = X = \frac{1}{2} * e^{ln\left(i*X - \frac{X}{i}\right) - \frac{\pi}{2}*i} \Rightarrow (C)\ is\ the\ complex\ plane\ frame\ of\ reference = i*X$$

$$i*X = \frac{1}{2} * e^{ln\left(i*X - \frac{X}{i}\right) - \frac{\pi}{2}*i} \Rightarrow (F)$$

Taking exponent with base [e] for both sides

Therefore, we can re write Euler's Identity as

$$e^{i*X} = e^{\frac{1}{2} * e^{ln\left(i*X - \frac{X}{i}\right) - \frac{\pi}{2}*i}}$$

$$e^{i*X} = e^{e^{ln\left(i*\frac{X}{2} - \frac{X}{2*i}\right) - \frac{\pi}{2}*i}} \Rightarrow (G)$$

In this Equation G

$$e^{i*X} = e^{e^{ln\left(i*\frac{X}{2}-\frac{X}{2*i}\right)-\frac{\pi}{2}*i}} \rightarrow (G)$$

Let X = 2 * X we did not change any thing in the numbers nature the even number will remain even, and the odd numbers will remain odd.

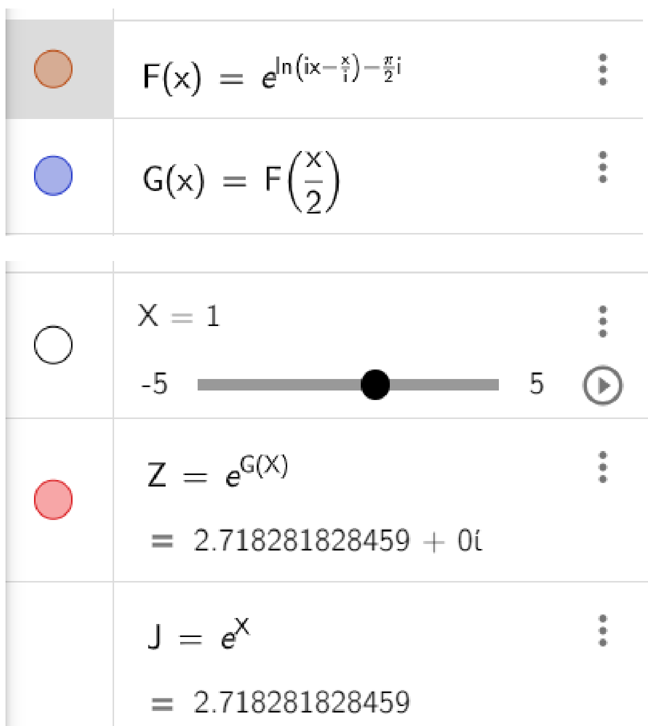
$$e^{i*2*X} = e^{e^{ln\left(i*X-\frac{X}{i}\right)-\frac{\pi}{2}*i}} \rightarrow (G)$$

If we consider eft hand side one function of X called E(X) and the right-hand side another function called G(X)

Then we can say that the relation between these two functions is

$$E(2*X) = G(X) \ and \ E(X) = G\left(\frac{X}{2}\right)$$

And this is the calculation for some values of the functional relation between these equation and Euler's Identity



$F(x) = e^{\ln\left(ix - \frac{x}{i}\right) - \frac{\pi}{2} i}$

$G(x) = F\left(\frac{x}{2}\right)$

$X = 2$

-5 5

$Z = e^{G(X)}$

$= 7.3890560989307 + 0i$

$J = e^{X}$

$= 7.3890560989307$

$X = 3$

-5 5

$Z = e^{G(X)}$

$= 20.0855369231877 + 0i$

$J = e^{X}$

$= 20.0855369231877$

$X = \ln\left(\frac{1}{2}\right)$

$= -0.6931471805599$

$Z = e^{G(X)}$

$= 0.5 - 0\mathit{i}$

$J = e^{X}$

≈ 0.5

$X = -\ln\left(\frac{1}{2}\right)$

$= 0.6931471805599$

$Z = e^{G(X)}$

$= 2 + 0\mathit{i}$

$J = e^{X}$

$= 2$

$X = -\ln\left(\frac{1}{3}\right)$

$= 1.0986122886681$

$Z = e^{G(X)}$

$= 3 + 0\mathit{i}$

$J = e^{X}$

$= 3$

$X = \ln\left(\frac{1}{3}\right)$

$= -1.0986122886681$

$Z = e^{G(X)}$

$= 0.3333333333333 - 0\iota$

$J = e^{X}$

≈ 0.3333333333333

$X = \ln\left(\frac{1}{17}\right)$

$= -2.8332133440562$

$Z = e^{G(X)}$

$= 0.0588235294118 - 0\iota$

$J = e^{X}$

≈ 0.0588235294118

$X = -\ln\left(\frac{1}{17}\right)$

$= 2.8332133440562$

$Z = e^{G(X)}$

$= 17 + 0\iota$

$J = e^{X}$

$= 17$

Therefore, this new functional representation for Euler's Identity will reach Exact natural number at each value of

$$at\ X = \ln\left(\frac{1}{N}\right)\ then\ e^{i*X} = e^{e^{ln\left(i*\frac{X}{2}-\frac{X}{2*i}\right)-\frac{\pi}{2}*i}} = \frac{1}{N} \rightarrow (H)$$

$$at\ X = -\ln\left(\frac{1}{N}\right)\ then\ e^{i*X} = e^{e^{ln\left(i*\frac{X}{2}-\frac{X}{2*i}\right)-\frac{\pi}{2}*i}} = N \rightarrow (H)$$

$X = -\ln\left(\frac{1}{\pi}\right)$

$= 1.1447298858494$

$Z = e^{G(X)}$

$= 3.1415926535898 + 0i$

$J = e^{X}$

$= 3.1415926535898$

$X = \pi$

$= 3.1415926535898$

$Z = e^{G(X)}$

$= 23.1406926327793 + 0i$

$J = e^{X}$

$= 23.1406926327793$

$T = e^{iX}$

$= -1 + 0i$

$z_{38} = e^{\pi}$

$= 23.1406926327793 + 0i$

$$F(x) = e^{\ln\left(ix - \frac{x}{i}\right) - \frac{\pi}{2} i}$$

$$G(x) = F\left(\frac{x}{2}\right)$$

$$X = \frac{\pi}{i}$$

$$= -3.1415926535898 \mathrm{i}$$

$$Z = e^{G(X)}$$

$$= -1 - 0 \mathrm{i}$$

$$J = e^{X}$$

$$= (-1, 0)$$

$$T = e^{iX}$$

$$= 23.1406926327793 + 0 \mathrm{i}$$

$$z_{38} = e^{\frac{\pi}{i}}$$

$$= -1 - 0 \mathrm{i}$$

Therefore, this form of Euler's Identity works on Cycle.

$= X = \frac{\pi}{i}$ $\quad$ *while Euler's Identity works on Cycle of* $X = \pi$

Therefore, this form of Euler's Identity works on Cycle.

= $X = \frac{\pi}{i}$ $\quad$ *while Euler's Identity works on Cycle of* $X = \pi$

$$X = \frac{\pi}{2\,i}$$
$$= -1.5707963267949\iota$$

$$Z = e^{G(X)}$$
$$= 0 - \iota$$

$$J = e^{X}$$
$$= (0, -1)$$

$$T = e^{iX}$$
$$= 4.8104773809654 + 0\iota$$

$$z_{38} = e^{\frac{\pi}{2i}}$$
$$= 0 - \iota$$

Therefore, this form of Euler's Identity works on Cycle.

= $X = \frac{\pi}{i}$ $\quad$ *while Euler's Identity works on Cycle of* $X = \pi$

$$X = \frac{\pi}{2}$$
$$= 1.5707963267949 + 0\iota$$

$$Z = e^{G(X)}$$
$$= 4.8104773809654 + 0\iota$$

$$J = e^{X}$$
$$= (4.8104773809654, 0)$$

$$T = e^{iX}$$
$$= 0 + \iota$$

$$z_{38} = e^{\frac{\pi}{2}}$$
$$= 4.8104773809654 + 0\iota$$

$$X = -\frac{\pi}{2\,i}$$

$$= 1.5707963267949\imath$$

$$Z = e^{G(X)}$$

$$= 0 + \imath$$

$$J = e^{X}$$

$$= (0,\ 1)$$

$$T = e^{iX}$$

$$= 0.2078795763508 + 0\imath$$

$$z_{38} = e^{\frac{-\pi}{2i}}$$

$$= 0 + \imath$$

And this observation says that with our even functional new representation for Euler's function, we will reach Zeros only when X is complex number Cycle of PI $X = \frac{\pi}{i}$ $or\ X = -\pi * i$

$$e^{e^{ln\left(i*X*\frac{\pi*i}{2} - X*\frac{\pi*i}{2*i}\right) - \frac{\pi}{2}*i}} = -1$$

$$e^{e^{ln\left(i*X*\pi*i - X*\frac{\pi*i}{i}\right) - \frac{\pi}{2}*i}} = 1$$

$$z_{39} = e^{\ln\left(i\frac{\pi}{2}i - \frac{\frac{\pi}{2}i}{i}\right) - \frac{\pi}{2}i}$$

$$= 0 + 3.1415926535898\imath$$

$$z_{40} = e^{\ln\left(i\frac{-\pi}{2}i - \frac{\frac{-\pi}{2}i}{i}\right) - \frac{\pi}{2}i}$$

$$= 0 - 3.1415926535898\imath$$

$$z_{41} = e^{\ln\left(i\pi i - \frac{\pi i}{i}\right) - \frac{\pi}{2}i}$$

$$= 0 + 6.2831853071796\imath$$

$$z_{42} = e^{\ln\left(-i\pi i - \frac{-\pi i}{i}\right) - \frac{\pi}{2}i}$$

$$= 0 - 6.2831853071796\imath$$

$$z_{41} = e^{\ln\left(i\pi i - \frac{\pi i}{i}\right) - \frac{\pi}{2} i}$$

$$= 0 + 6.2831853071796i$$

$$z_{42} = e^{\ln\left(-i\pi i - \frac{-\pi i}{i}\right) - \frac{\pi}{2} i}$$

$$= 0 - 6.2831853071796i$$

$$z_{43} = e^{\left(e^{\ln\left(-i\pi i - \frac{-\pi i}{i}\right) - \frac{\pi}{2} i}\right)}$$

$$= 1 + 0i$$

$$z_{44} = e^{\left(e^{\ln\left(i\pi i - \frac{\pi i}{i}\right) - \frac{\pi}{2} i}\right)}$$

$$= 1 - 0i$$

$$z_{46} = e^{\ln\left(i\frac{\pi}{2} i - \frac{\frac{\pi}{2} i}{i}\right) - \frac{\pi}{2} i}$$

$$= 0 + 3.1415926535898i$$

$$z_{47} = e^{\ln\left(i\frac{-\pi}{2} i - \frac{\frac{-\pi}{2} i}{i}\right) - \frac{\pi}{2} i}$$

$$= 0 - 3.1415926535898i$$

$$z_{48} = e^{\left(e^{\ln\left(-i \cdot 3 \cdot \frac{\pi}{2} i - \frac{-3\pi i}{2i}\right) - \frac{\pi}{2} i}\right)}$$

$$= -1 + 0i$$

$$z_{49} = e^{\left(e^{\ln\left(-i \cdot 5 \cdot \frac{\pi}{2} i - \frac{-5\pi i}{2i}\right) - \frac{\pi}{2} i}\right)}$$

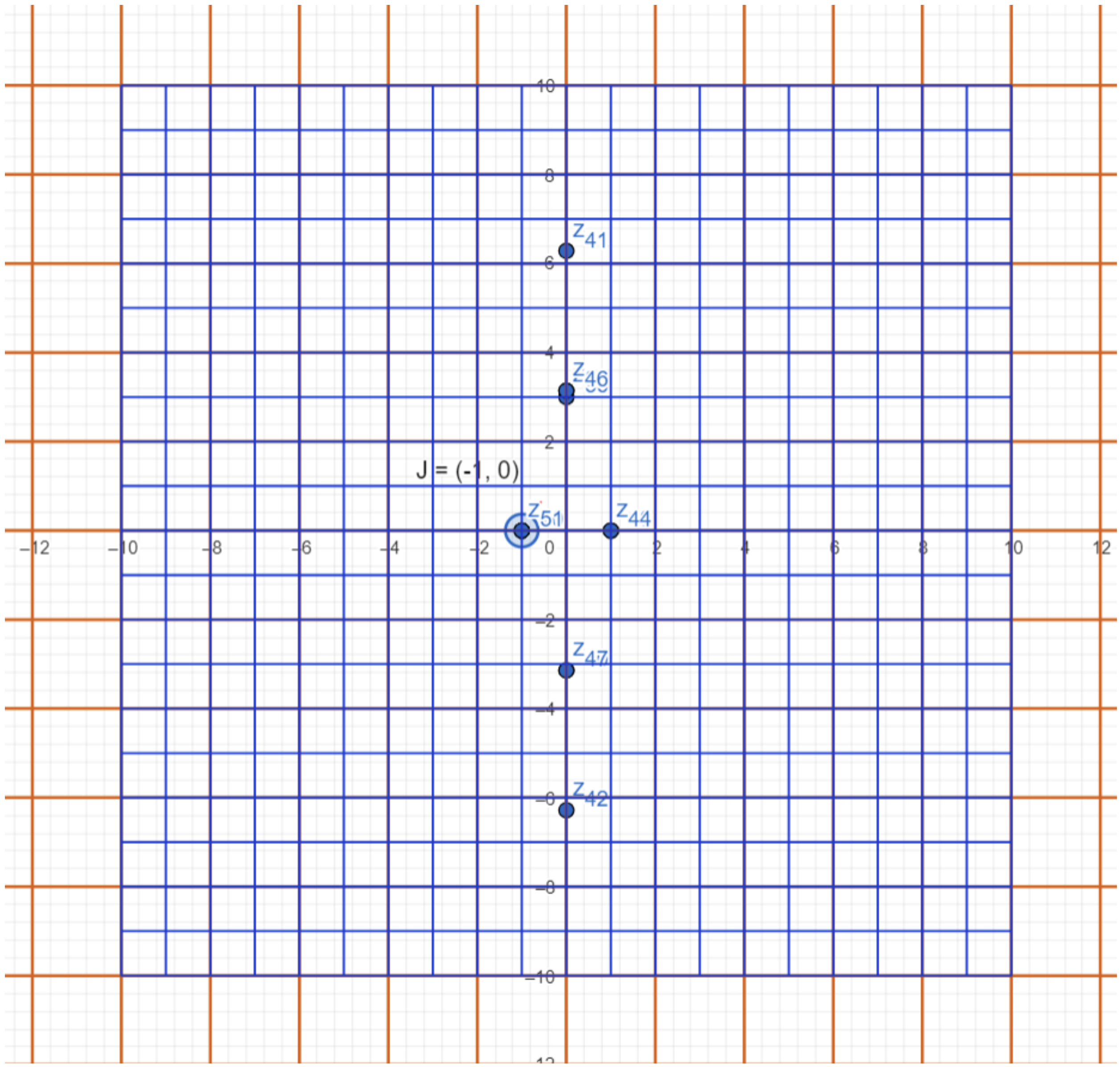
$$= -1 - 0i$$

$$z_{50} = e^{\left(e^{\ln\left(-i \cdot 7 \cdot \frac{\pi}{2} i - \frac{-7\pi i}{2i}\right) - \frac{\pi}{2} i}\right)}$$

$$= -1 - 0i$$

$$z_{51} = e^{\left(e^{\ln\left(-i \cdot 9 \cdot \frac{\pi}{2} i - \frac{-9\pi i}{2i}\right) - \frac{\pi}{2} i}\right)}$$

$$= -1 - 0i$$



J = (-1, 0)
z41
z46
z51
z44
z47
z42

And these two forms sync together AT.

$$X = N * \left(-\ln\left(\frac{1}{i}\right) * \frac{1}{\pi} - \frac{1}{2}\right)$$

$$X = N * \left(\ln\left(\frac{1}{i}\right) * \frac{1}{\pi} + \frac{1}{2}\right)$$

$$X = N * \left(\ln(i) * \frac{1}{\pi} - \frac{1}{2}\right)$$

$$X = N * \left(-\ln(i) * \frac{1}{\pi} + \frac{1}{2}\right)$$

$$X = -\ln\left(\frac{1}{i}\right) \frac{1}{\pi} - \frac{1}{2}$$

$= -0.5 + 0.5i$

$$Z = e^{G(X)}$$

$= 0.5322807302157 + 0.2907862882127i$

$$J = e^{X}$$

$= (0.5322807302157,\ 0.2907862882127)$

$$T = e^{iX}$$

$= 0.5322807302157 - 0.2907862882127i$

$$X = -\ln(i) \frac{1}{\pi} + \frac{1}{2}$$

$= 0.5 - 0.5i$

$$Z = e^{G(X)}$$

$= 1.4468890365842 - 0.7904390832136i$

$$J = e^{X}$$

$= (1.4468890365842,\ -0.7904390832136)$

$$T = e^{iX}$$

$= 1.4468890365842 + 0.7904390832136i$

$$X = 3\left(\ln\left(\frac{1}{i}\right)\frac{1}{\pi} + \frac{1}{2}\right)$$

$= 1.5 - 1.5i$

$Z = e^{G(X)}$

$= 0.3170221435804 - 4.4704623791804i$

$J = e^{X}$

$= (0.3170221435804, -4.4704623791804)$

$T = e^{iX}$

$= 0.3170221435804 + 4.4704623791804i$

$$X = 3\left(-\ln\left(\frac{1}{i}\right)\frac{1}{\pi} - \frac{1}{2}\right)$$

$= -1.5 + 1.5i$

$Z = e^{G(X)}$

$= 0.0157836031366 + 0.2225712161082i$

$J = e^{X}$

$= (0.0157836031366, 0.2225712161082)$

$T = e^{iX}$

$= 0.0157836031366 - 0.2225712161082i$

Going back to Euler's Equation if we replace X with our functional form.

$$X = \frac{1}{2} * \left(i * X - \frac{X}{i}\right) * e^{-\frac{\pi}{2}*i} \rightarrow (C)$$

$$e^{i*X} = Cos(X) + i * Sin(X) \rightarrow (*)$$

$$e^{i*\frac{1}{2}*\left(i*X-\frac{X}{i}\right)*e^{-\frac{\pi}{2}*i}} = Cos\left(\frac{1}{2} * \left(i * X - \frac{X}{i}\right) * e^{-\frac{\pi}{2}*i}\right) + i * Sin\left(\frac{1}{2} * \left(i * X - \frac{X}{i}\right) * e^{-\frac{\pi}{2}*i}\right) \rightarrow (*)$$

At X = π

$$e^{i\,\pi} = e^{i*\frac{\pi}{2}*\left(i-\frac{1}{i}\right)*e^{-\frac{\pi}{2}*i}} = Cos\left(\frac{\pi}{2} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2}*i}\right) + i * Sin\left(\frac{\pi}{2} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2}*i}\right) = -1 \rightarrow (*)$$

At each X = multiplier of 60 degrees Cos term will Equal ±0.5

$$X = \frac{N * \pi}{3}$$

$$e^{i*\frac{1}{2}*\left(i*\frac{N*\pi}{3}-\frac{N*\pi}{3*i}\right)*e^{-\frac{\pi}{2}*i}} = Cos\left(\frac{N * \pi}{6} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2}*i}\right) + i * Sin\left(\frac{N * \pi}{6} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2}*i}\right) \rightarrow (*)$$

For any positive natural number N that is multiplier of 3 the Cos term will equal -1 and Sin imaginary Term = 0

$$\frac{1}{2} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2}*i} = 1$$

$$e^{i*\frac{1}{2}*\left(i*\frac{N*\pi}{3}-\frac{N*\pi}{3*i}\right)*e^{-\frac{\pi}{2}*i}} = Cos\left(\frac{N * \pi}{3}\right) + i * Sin\left(\frac{N * \pi}{3}\right) \rightarrow (*)$$

$$e^{i*N*\pi} = Cos\left(\frac{N * \pi}{3}\right) + i * Sin\left(\frac{N * \pi}{3}\right) \rightarrow (*)$$

For each even value Cos term = 1 and imaginary term = 0 (sin = 0)

$S = 8$

-5 30

$$z_{60} = e^{i \frac{\pi}{6} \left(i \cdot 3S - \frac{3S}{i}\right) e^{\frac{-\pi}{2} i}}$$

$= 1 - 0i$

$$z_{62} = e^{i \frac{\pi}{2} \left(iS - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$$

$= 1 - 0i$

$$z_{61} = \cos(\pi \cdot 3\ S) + i\ \sin(\pi \cdot 3\ S)$$

$= 1 + 0i$

$$z_{59} = \cos\left(\frac{\pi}{6} \left(i \cdot 3\ S - \frac{3\ S}{i}\right) e^{-\frac{\pi}{2} i}\right)$$

$= 1 + 0i$

$$z_{58} = \sin\left(\frac{\pi}{6} \left(i \cdot 3\ S - \frac{3\ S}{i}\right) e^{\frac{-\pi}{2} i}\right)$$

$= 0 + 0i$

For each odd number Cos term = -1 and Sin term = 0 (Sin= 0)

$S = 23$

-5 30

$z_{60} = e^{i\frac{\pi}{6}\left(i \cdot 3S - \frac{3S}{i}\right) e^{\frac{-\pi}{2} i}}$

$= -1 + 0\imath$

$z_{62} = e^{i\frac{\pi}{2}\left(iS - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$

$= -1 + 0\imath$

$z_{61} = \cos(\pi \cdot 3\ S) + i\ \sin(\pi \cdot 3\ S)$

$= -1 + 0\imath$

$z_{59} = \cos\left(\frac{\pi}{6}\left(i \cdot 3\ S - \frac{3\ S}{i}\right) e^{-\frac{\pi}{2} i}\right)$

$= -1 - 0\imath$

$z_{58} = \sin\left(\frac{\pi}{6}\left(i \cdot 3\ S - \frac{3\ S}{i}\right) e^{\frac{-\pi}{2} i}\right)$

$= 0 - 0\imath$

Odd numbers Cos term (real part of the complex number) will = 0.5 and if we divide each S by 3

Only if S is multiplier of 3 we get value = -1 (i.e. not primes) = -1 otherwise = 0.5

For each odd number S it reach pi at π/3 only when S = S/2 to get the for pi/6.

$S = 17$

-5 30

$$z_{62} = e^{i\frac{\pi}{2}\left(iS-\frac{S}{i}\right)e^{\frac{-\pi}{2}i}}$$

$$= -1 - 0i$$

$$z_{59} = \cos\left(\frac{\pi}{6}\left(i\,S - \frac{S}{i}\right)e^{-\frac{\pi}{2}i}\right)$$

$$= 0.5 + 0i$$

$$z_{58} = \sin\left(\frac{\pi}{6}\left(i\,S - \frac{S}{i}\right)e^{\frac{-\pi}{2}i}\right)$$

$$= -0.8660254037844 + 0i$$

$$z_{61} = \cos(\pi\,S) + i\,\sin(\pi\,S)$$

$$= -1 + 0i$$

$$z_{60} = e^{i\frac{\pi}{6}\left(iS-\frac{S}{i}\right)e^{\frac{-\pi}{2}i}}$$

$$= 0.5 - 0.8660254037844i$$

Even numbers Cos term (real part of the complex number) will = 0.5 and if we divide each S by 3

Only if S is multiplier of 3 we get value = -1 (i.e. not primes) = -1 otherwise = 0.5

And because it is even number S then our pi value will be $\frac{\pi}{3} = 60°$

$S = 8$

-5

$$z_{62} = e^{i\frac{\pi}{2}\left(iS-\frac{S}{i}\right)e^{\frac{-\pi}{2}i}}$$

$= 1 - 0i$

$$z_{59} = \cos\left(\frac{\pi}{6}\left(i\,S - \frac{S}{i}\right)e^{-\frac{\pi}{2}i}\right)$$

$= -0.5 - 0i$

$$z_{58} = \sin\left(\frac{\pi}{6}\left(i\,S - \frac{S}{i}\right)e^{\frac{-\pi}{2}i}\right)$$

$= 0.8660254037844 - 0i$

$$z_{61} = \cos(\pi\,S) + i\,\sin(\pi\,S)$$

$= 1 + 0i$

$$z_{60} = e^{i\frac{\pi}{6}\left(iS-\frac{S}{i}\right)e^{\frac{-\pi}{2}i}}$$

$= -0.5 + 0.8660254037844i$

For Cases of S = S/2; complex number imaginary part will be = 0.5 and real part of complex number = cos(60)

$$S = 0 + 0.5$$

$$= 0.5$$

$$z_{62} = e^{i\frac{\pi}{2}\left(iS - \frac{S}{i}\right)e^{\frac{-\pi}{2}i}}$$

$$= 0 + 1\iota$$

$$z_{59} = \cos\left(\frac{\pi}{6}\left(i\,S - \frac{S}{i}\right)e^{-\frac{\pi}{2}i}\right)$$

$$= 0.8660254037844 + 0\iota$$

$$z_{58} = \sin\left(\frac{\pi}{6}\left(i\,S - \frac{S}{i}\right)e^{\frac{-\pi}{2}i}\right)$$

$$= 0.5 + 0\iota$$

$$z_{61} = \cos(\pi\,S) + i\,\sin(\pi\,S)$$

$$= \iota$$

$$z_{60} = e^{i\frac{\pi}{6}\left(iS - \frac{S}{i}\right)e^{\frac{-\pi}{2}i}}$$

$$= 0.8660254037844 + 0.5\iota$$

For case S = 5/2 = 2.5

$$S = 2 + 0.5$$

$$= 2.5$$

$$z_{62} = e^{i \frac{\pi}{2} \left(i S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$$

$$= 0 + 1 \imath$$

$$z_{59} = \cos\left(\frac{\pi}{6} \left(i\, S - \frac{S}{i}\right) e^{-\frac{\pi}{2} i}\right)$$

$$= -0.8660254037844 - 0 \imath$$

$$z_{58} = \sin\left(\frac{\pi}{6} \left(i\, S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}\right)$$

$$= 0.5 - 0 \imath$$

$$z_{61} = \cos(\pi\, S) + i\, \sin(\pi\, S)$$

$$= \imath$$

$$z_{60} = e^{i \frac{\pi}{6} \left(i S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$$

$$= -0.8660254037844 + 0.5 \imath$$

In case S = 19/2

$$S = 9 + 0.5$$

$= 9.5$

$$z_{62} = e^{i \frac{\pi}{2} \left(i S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$$

$= 0 - 1ί$

$$z_{59} = \cos\left(\frac{\pi}{6} \left(i\, S - \frac{S}{i}\right) e^{-\frac{\pi}{2} i}\right)$$

$= -0.8660254037844 + 0ί$

$$z_{58} = \sin\left(\frac{\pi}{6} \left(i\, S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}\right)$$

$= -0.5 - 0ί$

$$z_{61} = \cos(\pi\, S) + i\, \sin(\pi\, S)$$

$= -1ί$

$$z_{60} = e^{i \frac{\pi}{6} \left(i S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$$

$= -0.8660254037844 - 0.5ί$

In Case S is multiplier of 3; Like S = {3,6,9,12,15, ….}

Imaginary part of the complex number = i and Real part number of the complex number = 0.

$$S = 1 + 0.5$$
$$= 1.5$$

$$z_{62} = e^{i \frac{\pi}{2} \left(i S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$$
$$= 0 - 1 i$$

$$z_{59} = \cos\left(\frac{\pi}{6} \left(i\, S - \frac{S}{i}\right) e^{-\frac{\pi}{2} i}\right)$$
$$= 0 - 0 i$$

$$z_{58} = \sin\left(\frac{\pi}{6} \left(i\, S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}\right)$$
$$= 1 + 0 i$$

$$z_{61} = \cos(\pi\, S) + i\, \sin(\pi\, S)$$
$$= -1 i$$

$$z_{60} = e^{i \frac{\pi}{6} \left(i S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$$
$$= 0 + 1 i$$

$S = -0.5$

-5 30

$z_{62} = e^{i \frac{\pi}{2} \left(i S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$

$= 0 - i$

$z_{59} = \cos\left(\frac{\pi}{6} \left(i\, S - \frac{S}{i}\right) e^{-\frac{\pi}{2} i}\right)$

$= 0.8660254037844 + 0i$

$z_{58} = \sin\left(\frac{\pi}{6} \left(i\, S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}\right)$

$= -0.5 + 0i$

$z_{61} = \cos(\pi\, S) + i\ \sin(\pi\, S)$

$= -1i$

$z_{60} = e^{i \frac{\pi}{6} \left(i S - \frac{S}{i}\right) e^{\frac{-\pi}{2} i}}$

$= 0.8660254037844 - 0.5i$

One degree can be represented by this formula.

$$\frac{1}{2} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2} * i} = 1$$

$$\left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2} * i} = 2$$

$$\frac{1}{3}\left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2} * i} = \frac{1}{6}$$

$$\frac{\pi}{3}\left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2} * i} = \frac{\pi}{6}$$

$$\frac{1}{2} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2} * i} + \frac{1}{2} = \frac{3}{2}$$

$$\frac{2}{2} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2} * i} + \frac{1}{2} = \frac{5}{2}$$

$$\frac{3}{2} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2} * i} + \frac{1}{2} = \frac{7}{2}$$

$$\frac{4}{2} * \left(i - \frac{1}{i}\right) * e^{-\frac{\pi}{2} * i} + \frac{1}{2} = \frac{9}{2}$$

$$\mathrm{DEG1} = \cos\left(1 \cdot \frac{\pi}{180°}\right)$$

$$= 0.5403023058681$$

$$z_{63} = \cos\left(\frac{1}{2}\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}}\right)$$

$$z_{57} = \cos\left(\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}}\right)$$

$$= -0.4161468365471 + 0\mathrm{i}$$

$$\mathrm{DEG2} = \cos\left(2 \cdot \frac{\pi}{180°}\right)$$

$$= -0.4161468365471$$

$$\mathrm{DEG3} = \cos\left(3 \cdot \frac{\pi}{180°}\right)$$

$= -0.9899924966004$

$$z_{65} = \cos\left(\frac{3}{2}\ \left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right)\ e^{\frac{\pi}{2}\mathrm{i}}\right)$$

$= -0.9899924966004 + 0\mathrm{i}$

$$\mathrm{DEG1O3} = \cos\left(\frac{1}{3} \cdot \frac{\pi}{180°}\right)$$

$= 0.9449569463147$

$$z_{66} = \cos\left(\frac{1}{6}\ \left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right)\ e^{\frac{\pi}{2}\mathrm{i}}\right)$$

$= 0.9449569463147 + 0\mathrm{i}$

$$z_{67} = \cos\left(\frac{\pi}{6}\ \left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right)\ e^{\frac{\pi}{2}\mathrm{i}}\right)$$

$= 0.5 + 0\mathrm{i}$

$$\mathrm{DEG1O3PI} = \cos\left(\frac{\pi}{3} \cdot \frac{\pi}{180°}\right)$$

$= 0.5$

$$z_{68} = \sin\left(\frac{\pi}{6}\ \left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right)\ e^{\frac{\pi}{2}\mathrm{i}}\right)$$

$= 0.8660254037844 - 0\mathrm{i}$

$$\mathrm{DEG60} = \sin(60°)$$

$= 0.8660254037844$

$$\text{DEG3O2} = \cos\left(1.5 \cdot \frac{\pi}{180°}\right)$$

$= 0.0707372016677$

$$z_{69} = \cos\left(\frac{1}{2}\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}} + \frac{1}{2}\right)$$

$= 0.0707372016677 + 0\imath$

$$\text{X3O2} = \cos\left(\frac{3}{2}\right)$$

$= 0.0707372016677$

$$z_{69} = \cos\left(\frac{2}{2}\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}} + \frac{1}{2}\right)$$

$= -0.8011436155469 + 0\imath$

$$\text{X3O2} = \cos\left(\frac{5}{2}\right)$$

$= -0.8011436155469$

$$z_{69} = \cos\left(\frac{3}{2}\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}} + \frac{1}{2}\right)$$

$= -0.9364566872908 - 0\imath$

$$\text{X3O2} = \cos\left(\frac{7}{2}\right)$$

$= -0.9364566872908$

$$z_{69} = \cos\left(\frac{4}{2}\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}} + \frac{1}{2}\right)$$

$= -0.2107957994308 - 0ί$

$$X3O2 = \cos\left(\frac{9}{2} \cdot \frac{\pi}{180°}\right)$$

$= -0.2107957994308$

And these cases if we move by cycle of pi

$$z_{69} = \cos\left(\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}} + 1\right)$$

$= -0.9899924966004 + 0ί$

$$X3O2 = \cos\left(\frac{6}{2} \cdot \frac{\pi}{180°}\right)$$

$= -0.9899924966004$

$$e = \cos\left(\frac{6}{2}\right)$$

$= -0.9899924966004$

$$z_{69} = \cos\left(\left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} - 1\right)$$

$$= 0.5403023058681 + 0i$$

$$X3O2 = \cos\left(\left(\frac{6}{2} - 2\right) \cdot \frac{\pi}{180°}\right)$$

$$= 0.5403023058681$$

$$e = \cos\left(\frac{6}{2} - 2\right)$$

$$= 0.5403023058681$$

$$z_{69} = \cos\left(\left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} - \frac{1}{2}\right)$$

$$= 0.0707372016677 + 0i$$

$$X3O2 = \cos\left(\left(\frac{6}{2} - \frac{3}{2}\right) \cdot \frac{\pi}{180°}\right)$$

$$= 0.0707372016677$$

$$e = \cos\left(\frac{6}{2} - \frac{3}{2}\right)$$

$$= 0.0707372016677$$

$$z_{69} = \cos\left(\left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i}\right)$$

$$= -0.4161468365471 + 0i$$

$$X3O2 = \cos\left(\left(\frac{6}{2} - 1\right) \cdot \frac{\pi}{180°}\right)$$

$$= -0.4161468365471$$

$$e = \cos\left(\frac{6}{2} - 1\right)$$

$$= -0.4161468365471$$

$$z_{69} = \cos\left(\frac{\pi}{3}\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}}\right)$$

$= -0.5 + 0i$

$$X3O2 = \cos\left(\frac{\pi}{3}\left(\frac{6}{2} - 1\right) \frac{\pi}{180°}\right)$$

$= -0.5$

$$e = \cos\left(\frac{\pi}{3}\left(\frac{6}{2} - 1\right)\right)$$

$= -0.5$

$$z_{69} = \cos\left(\frac{\pi}{6}\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}}\right)$$

$= 0.5 + 0i$

$$X3O2 = \cos\left(\frac{\pi}{6}\left(\frac{6}{2} - 1\right) \frac{\pi}{180°}\right)$$

$= 0.5$

$$e = \cos\left(\frac{\pi}{6}\left(\frac{6}{2} - 1\right)\right)$$

$= 0.5$

$$z_{69} = \cos\left(\frac{\pi}{2}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}+\frac{1}{2}\right)$$

$= -0.8775825618904 - 0i$

$$X3O2 = \cos\left(\pi\left(\frac{6}{2}-\frac{1}{2\pi}\right)\frac{\pi}{180°}\right)$$

$= -0.8775825618904$

$$e = \cos\left(\pi\left(\frac{6}{2}-\frac{1}{2\pi}\right)\right)$$

$= -0.8775825618904$

$$z_{69} = \cos\left(3\cdot\frac{\pi}{2}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}+\frac{1}{2}\right)$$

$= -0.8775825618904 - 0i$

$$X3O2 = \cos\left(3\pi\left(\frac{6}{2}-\frac{1}{6\pi}\right)\frac{\pi}{180°}\right)$$

$= -0.8775825618904$

$$e = \cos\left(3\pi\left(\frac{6}{2}-\frac{1}{2\cdot 3\pi}\right)\right)$$

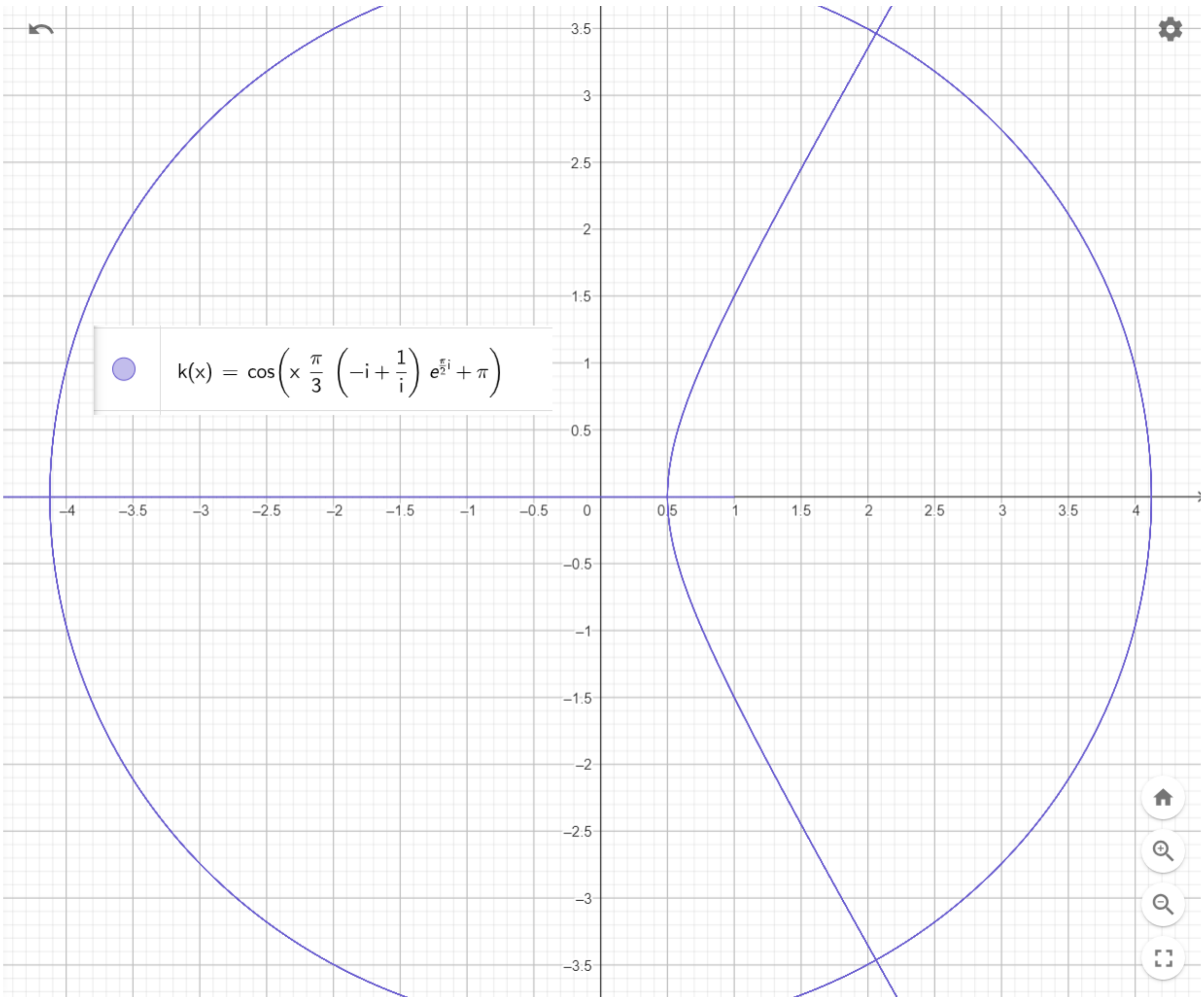
$= -0.8775825618904$

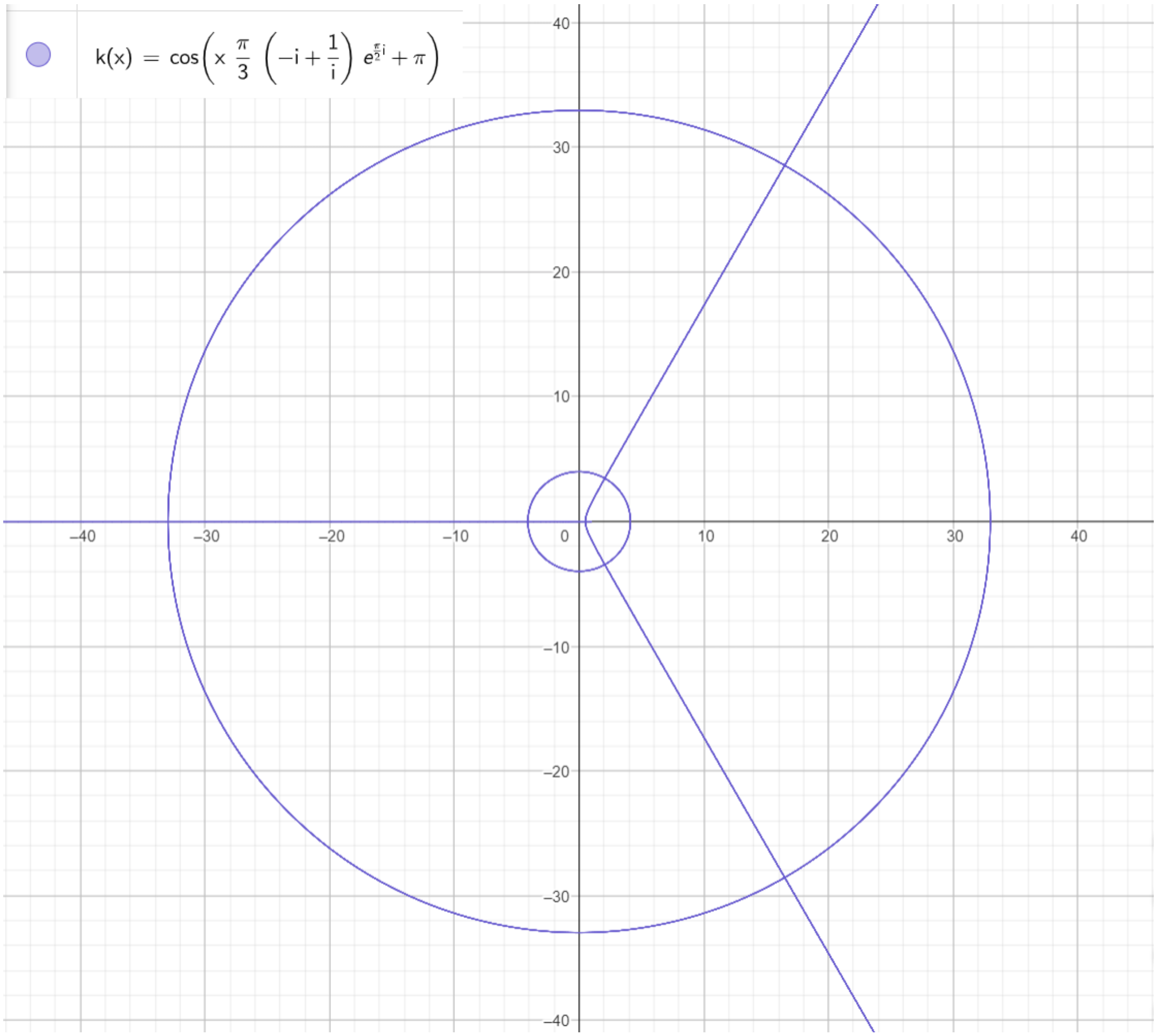
$$z_{69} = \cos\left(3\cdot\frac{\pi}{2}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}+\frac{3\pi}{2}\right)$$

$= 0 + 0i$

$$z_{69} = \cos\left(5 \cdot \frac{\pi}{2}\left(-\mathrm{i} + \frac{1}{\mathrm{i}}\right) e^{\frac{\pi}{2}\mathrm{i}} + \frac{5\,\pi}{2}\right)$$

$= 0 - 0\mathrm{i}$




$k(x) = \cos\left(x \frac{\pi}{3} \left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} + \pi\right)$
40
30
20
10
0
−10
−20
−30
−40

$$z_{71} = \cos\left(1 \cdot \frac{\pi}{3} \left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} + \pi\right)$$

$$= 0.5 - 0i$$

$$z_{72} = \cos\left(2 \cdot \frac{\pi}{3} \left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} + \pi\right)$$

$$= 0.5 + 0i$$

$$z_{73} = \cos\left(4 \cdot \frac{\pi}{3} \left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} + \pi\right)$$

$$= 0.5 - 0i$$

$$z_{74} = \cos\left(5 \cdot \frac{\pi}{3} \left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} + \pi\right)$$

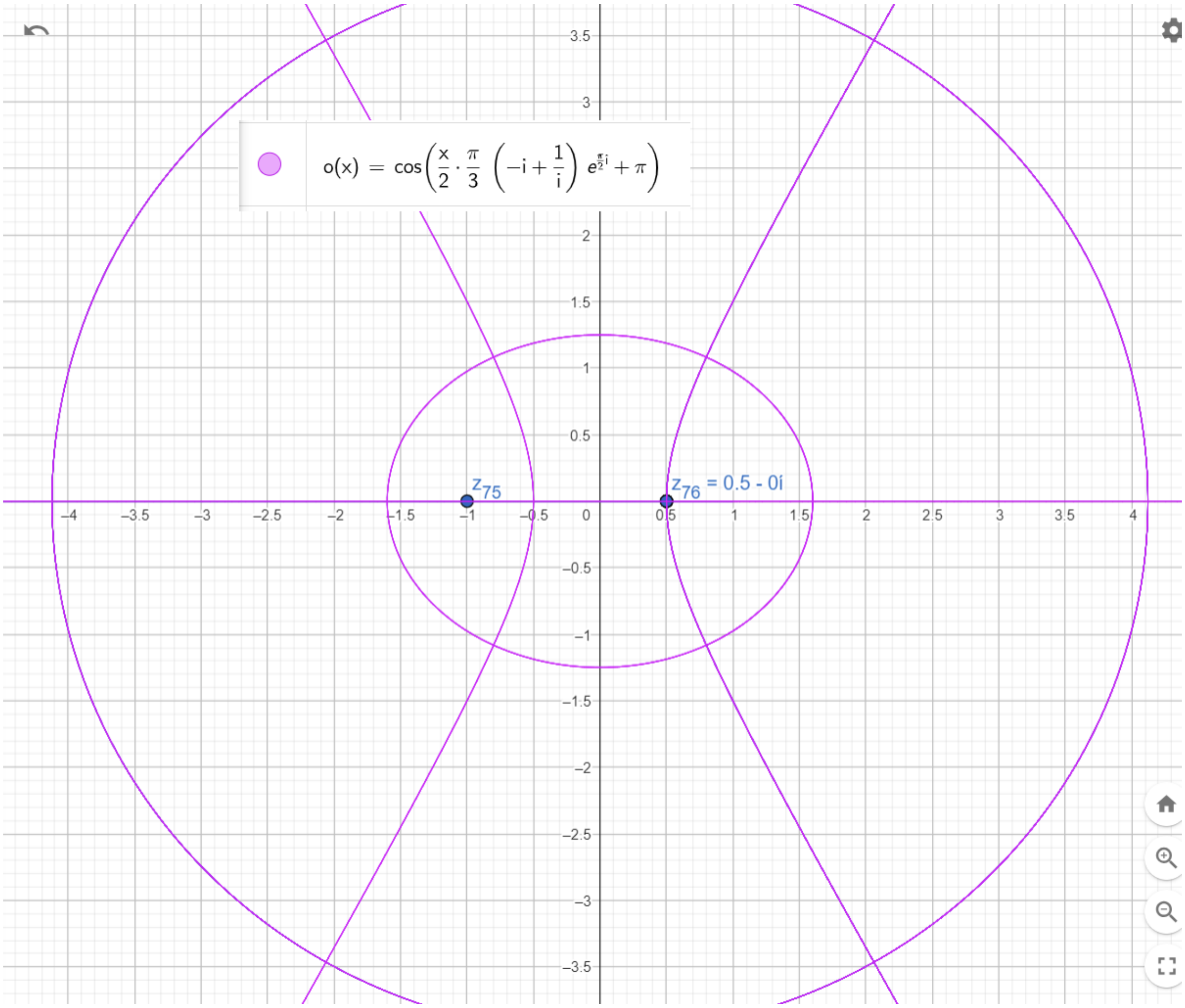
$$= 0.5 + 0i$$

$$z_{75} = \cos\left(6 \cdot \frac{\pi}{3} \left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} + \pi\right)$$

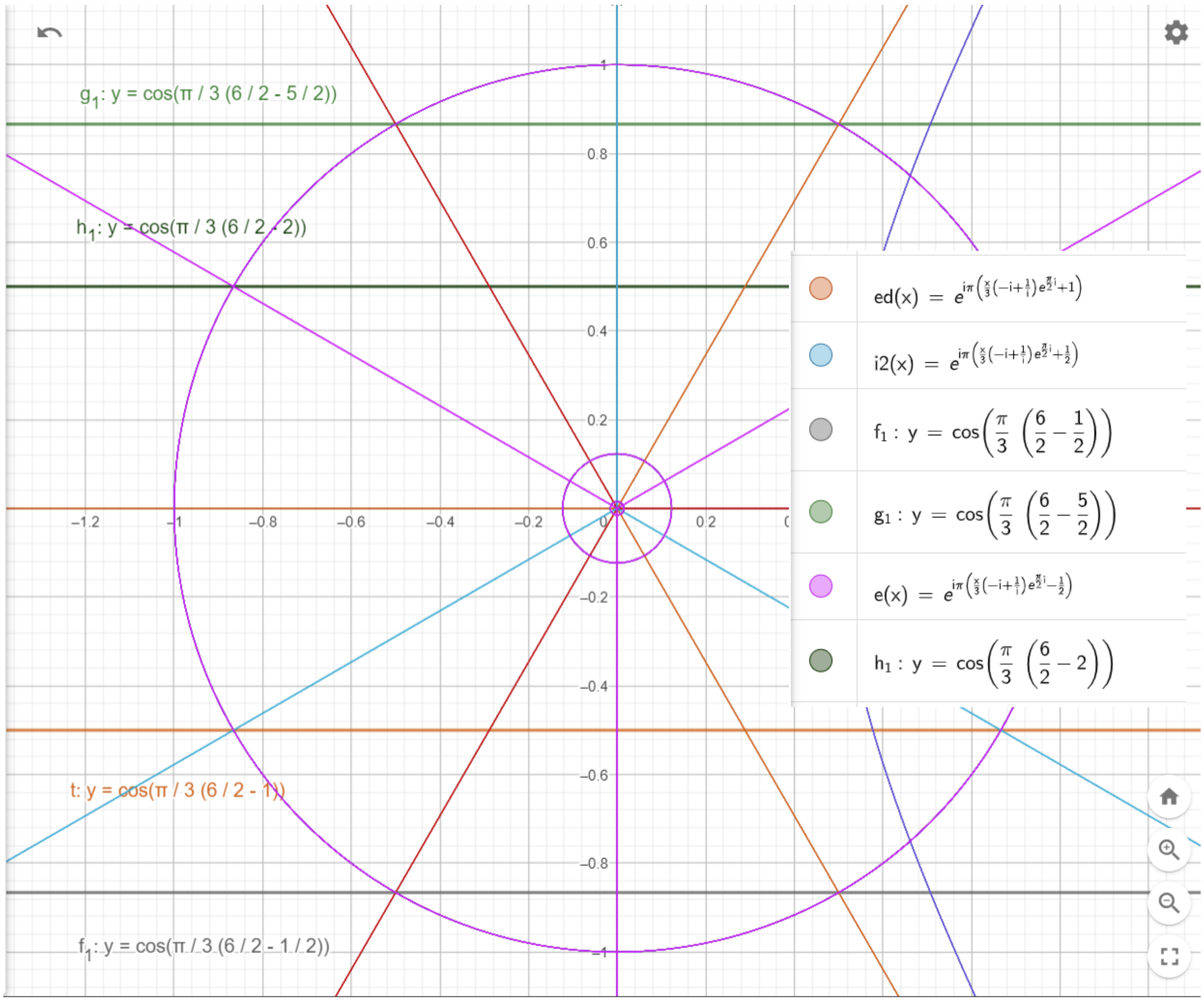
$$= -1 + 0i$$

$$z_{76} = \cos\left(7 \cdot \frac{\pi}{3} \left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} + \pi\right)$$

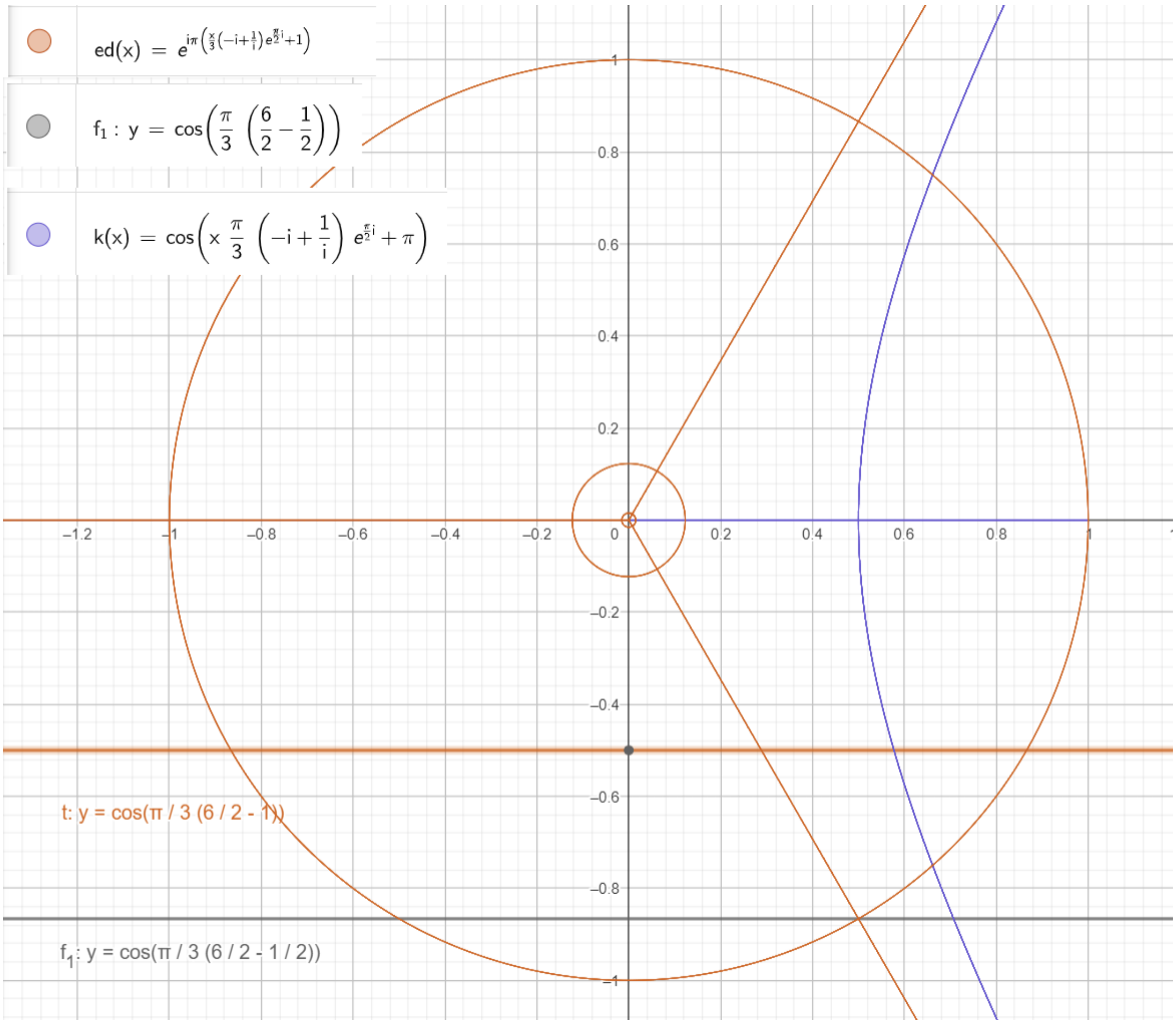
$$= 0.5 - 0i$$



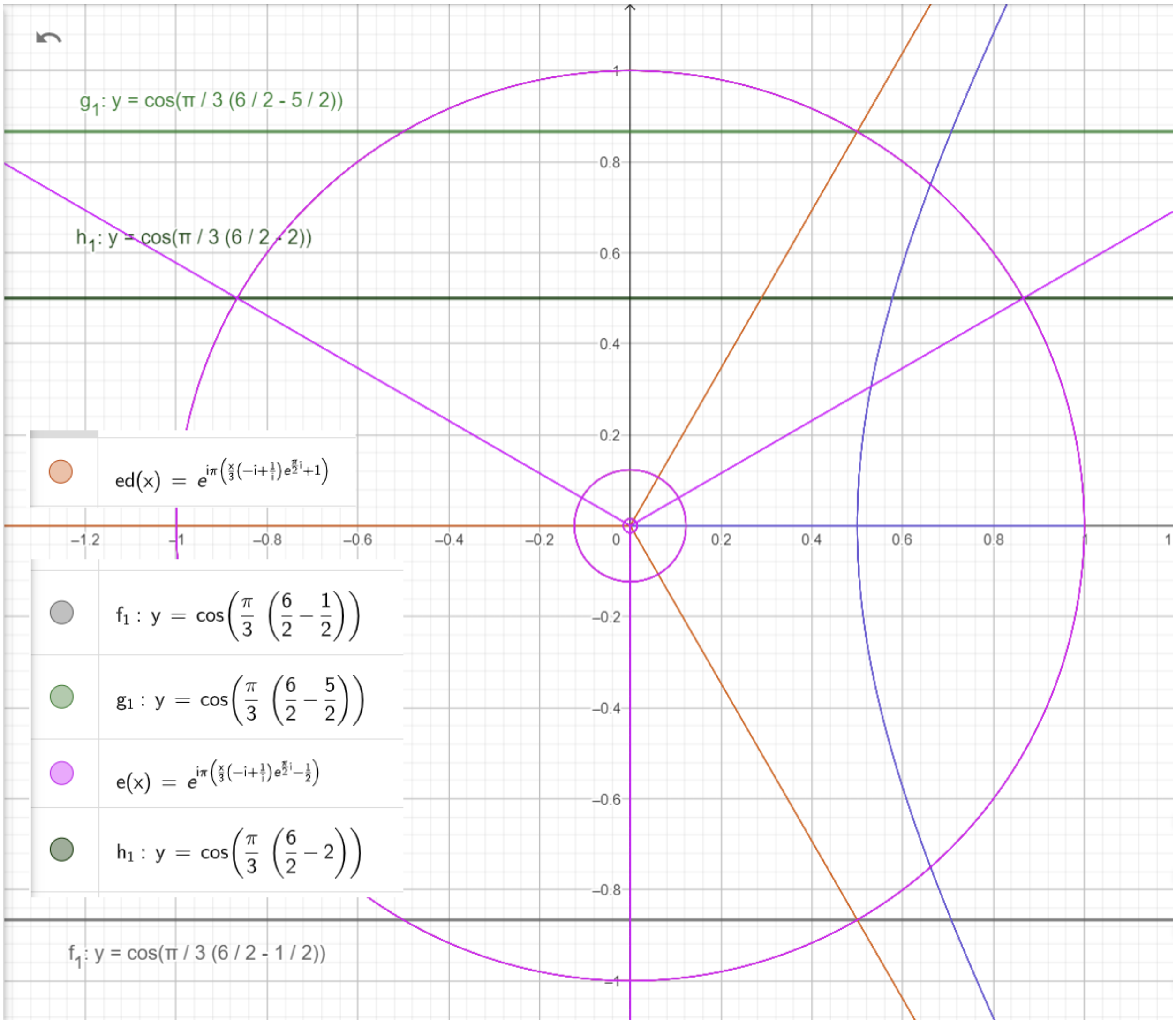
$o(x) = \cos\left(\frac{x}{2} \cdot \frac{\pi}{3} \left(-i + \frac{1}{i}\right) e^{\frac{\pi}{2} i} + \pi\right)$
z_{75}
$z_{76} = 0.5 - 0i$

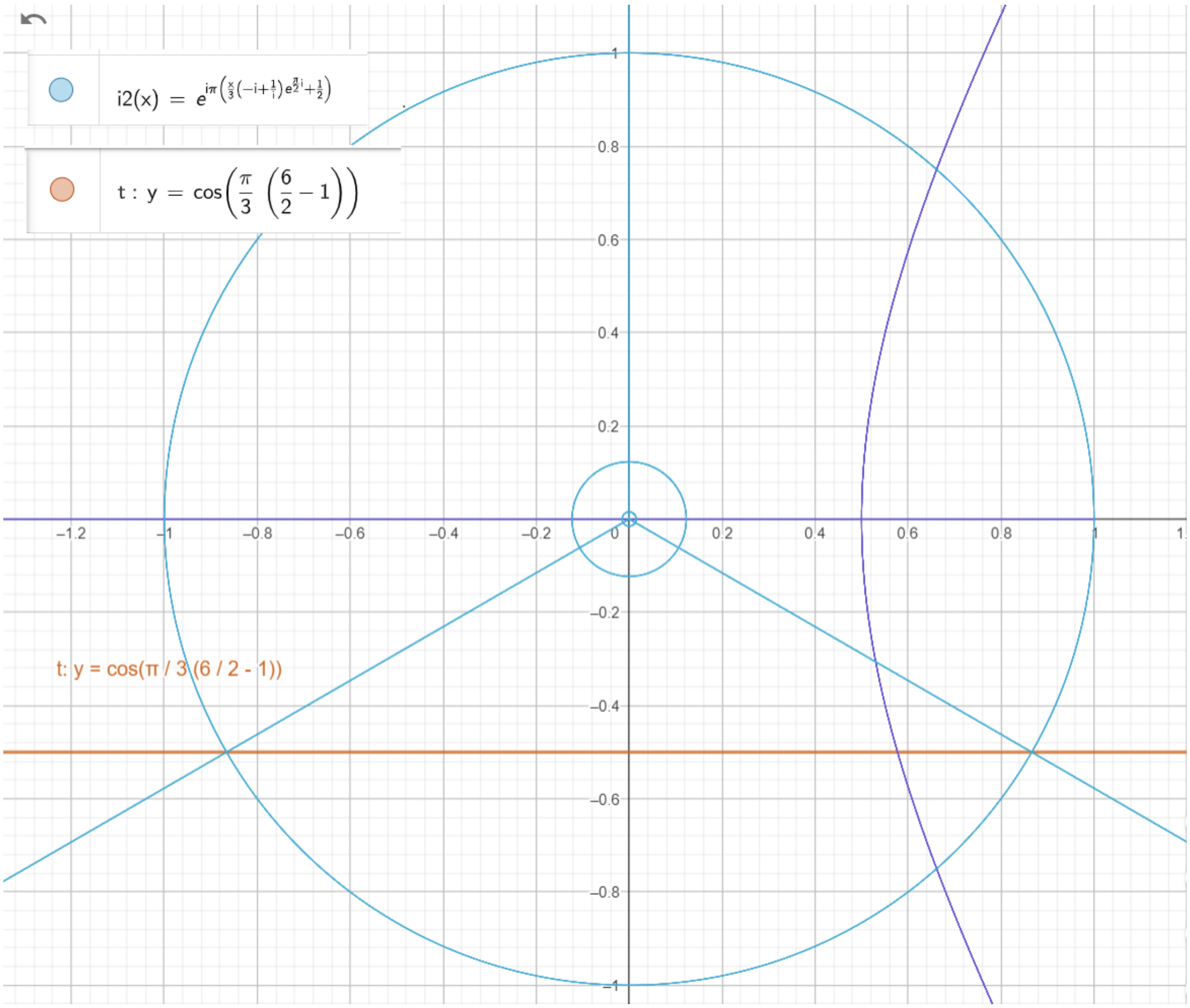


g1: y = cos(π / 3 (6 / 2 - 5 / 2))
h1: y = cos(π / 3 (6 / 2 - 2))
t: y = cos(π / 3 (6 / 2 - 1))
f1: y = cos(π / 3 (6 / 2 - 1 / 2))
$ed(x) = e^{i\pi\left(\frac{x}{3}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}+1\right)}$
$i2(x) = e^{i\pi\left(\frac{x}{3}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}+\frac{1}{2}\right)}$
$f_1 : y = \cos\left(\frac{\pi}{3}\left(\frac{6}{2}-\frac{1}{2}\right)\right)$
$g_1 : y = \cos\left(\frac{\pi}{3}\left(\frac{6}{2}-\frac{5}{2}\right)\right)$
$e(x) = e^{i\pi\left(\frac{x}{3}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}-\frac{1}{2}\right)}$
$h_1 : y = \cos\left(\frac{\pi}{3}\left(\frac{6}{2}-2\right)\right)$

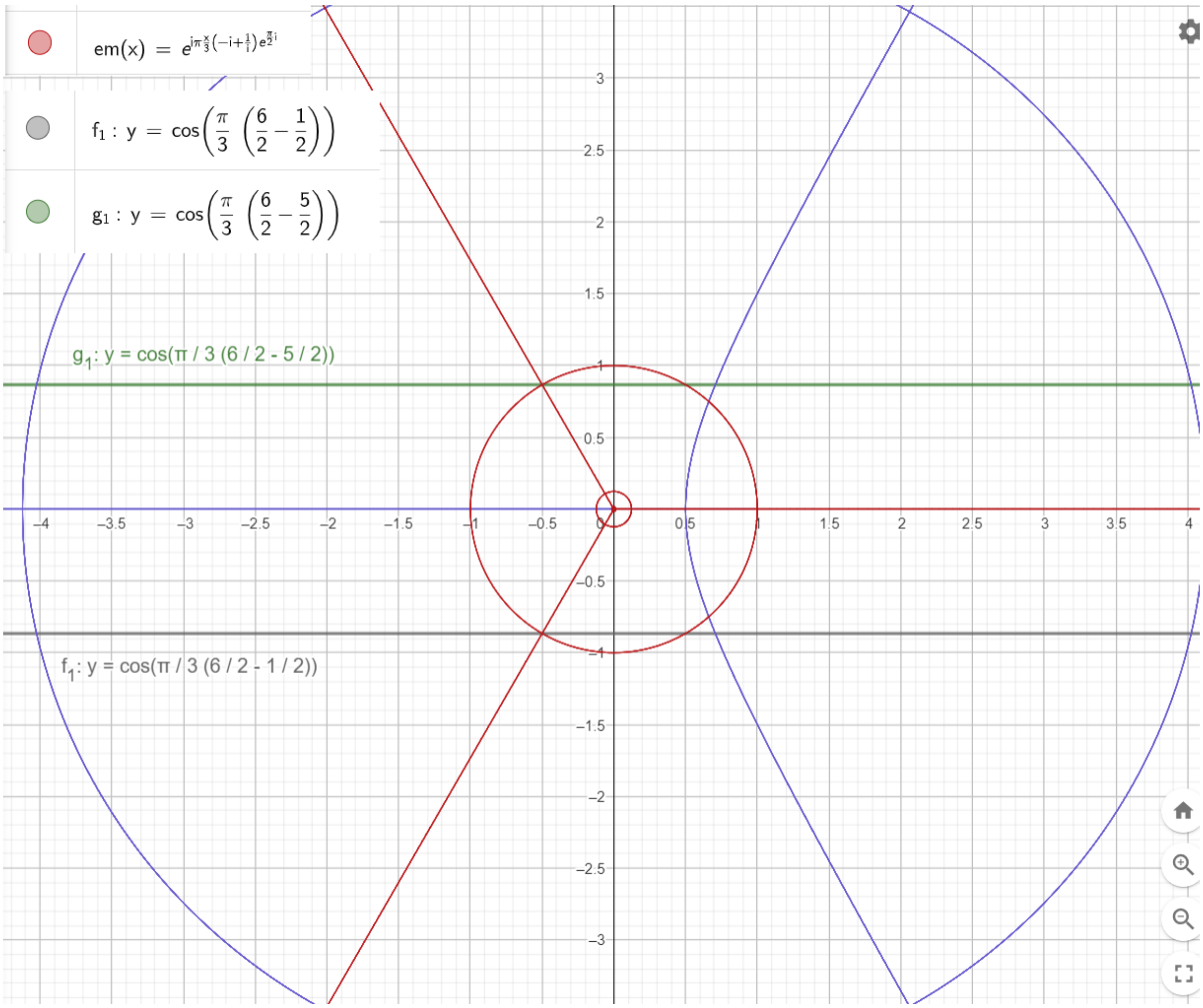


$\mathrm{ed}(x) = e^{i\pi\left(\frac{x}{3}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}+1\right)}$
$f_1 : y = \cos\left(\frac{\pi}{3}\left(\frac{6}{2}-\frac{1}{2}\right)\right)$
$k(x) = \cos\left(x\,\frac{\pi}{3}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}+\pi\right)$
t: y = cos(π / 3 (6 / 2 - 1))
f_1: y = cos(π / 3 (6 / 2 - 1 / 2))


g1: y = cos(π / 3 (6 / 2 - 5 / 2))
h1: y = cos(π / 3 (6 / 2 - 2))
ed(x) = e^(iπ(x/3(−i+1/i)e^(π/2 i)+1))
f1 : y = cos(π/3 (6/2 − 1/2))
g1 : y = cos(π/3 (6/2 − 5/2))
e(x) = e^(iπ(x/3(−i+1/i)e^(π/2 i)−1/2))
h1 : y = cos(π/3 (6/2 − 2))
f1: y = cos(π / 3 (6 / 2 - 1 / 2))
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
−1.2
−0.8
−0.6
−0.4
−0.2
0.2
0.4
0.6
0.8
1



i2(x) = $e^{i\pi\left(\frac{x}{3}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}+\frac{1}{2}\right)}$
t : y = $\cos\left(\frac{\pi}{3}\left(\frac{6}{2}-1\right)\right)$
t: y = cos(π / 3 (6 / 2 - 1))



$em(x) = e^{i\pi \frac{x}{3}\left(-i+\frac{1}{i}\right)e^{\frac{\pi}{2}i}}$
$f_1 : y = \cos\left(\frac{\pi}{3}\left(\frac{6}{2}-\frac{1}{2}\right)\right)$
$g_1 : y = \cos\left(\frac{\pi}{3}\left(\frac{6}{2}-\frac{5}{2}\right)\right)$
g1: y = cos(π / 3 (6 / 2 - 5 / 2))
f1: y = cos(π / 3 (6 / 2 - 1 / 2))