More detailed explanatory notes on Definition

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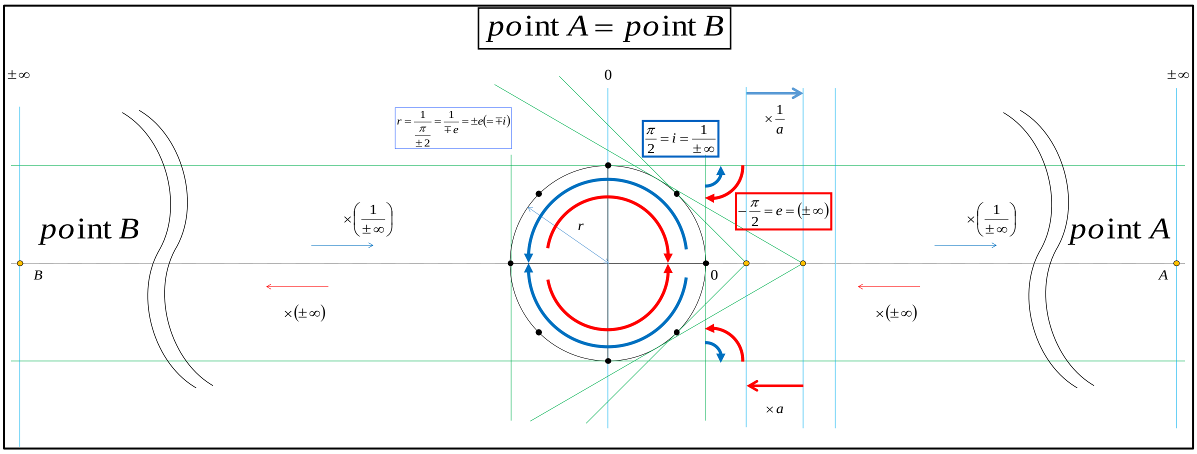
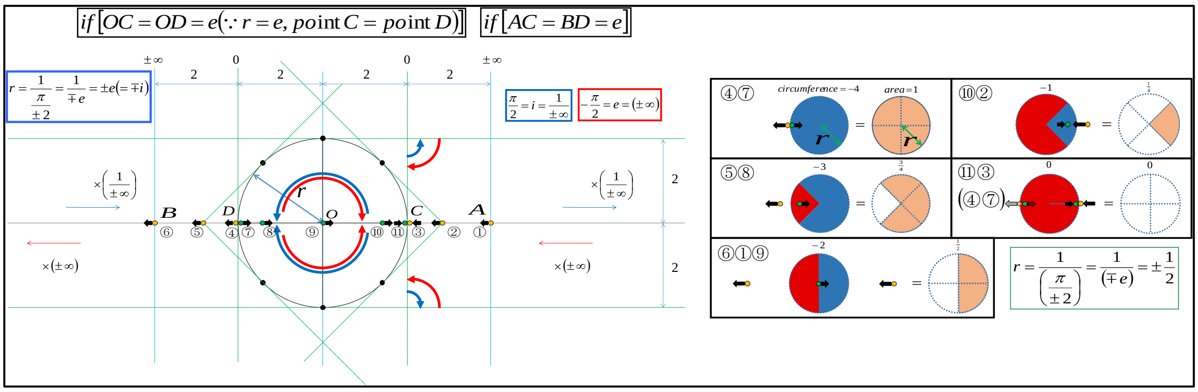
Abstract & General comments

First, ±∞ is constant at any observation point. If a set of real numbers is R, then On the other hand, when x (∈R)is taken on a number line, the absolute value X becomes larger toward ±∞ as the absolute value X is expanded. Similarly, as the size decreases, the absolute value X decreases toward 0. Furthermore, x (-1) represents the reversal of the direction of the axis.





From "Reconstruction Proofs by Definition" of my No.67, I define all numbers as 5 numbers.

-2 -1 0=2 1

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

②$\log 1=0$

③$\log 0=\log\left(\frac{1}{\pm\infty}\right)=\log\left(e^{-1}\right)=\log(-e)=\log\left(\frac{\pi}{2}\right)=-1$

④$\log(-1)=i\pi=-2$

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

②⇒③⇒④⇒①⇒②⇒③⇒④⇒①⇒⋯

$\ln(0)=\ln\left(\frac{1}{\pm\infty}\right)=\ln\left(\frac{1}{e}\right)=\ln(e^{-1})=-1$

$\ln(1)=\ln(-e^{2})=\ln(-1)+2=i\pi+2=-2+2=0$

$\ln(2)=\ln(-e)=\ln(-1)+1=i\pi+1=-2+1=-1$

$\ln(3)=\ln(-2)=\ln(e)=1$

$\ln(4)=\ln(-1)=i\pi=-2$

$\ln(5)=\ln(0)=-1$

$\ln(6)=\ln(1)=0$

$\ln(7)=\ln(2)=-1$

$\ln(8)=\ln(3)=1$

$\ln(9)=\ln(4)=-2$

⋮

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$\vdots$