

It has long been the search for the link between the fundamental constants.

Archimedes' constant π

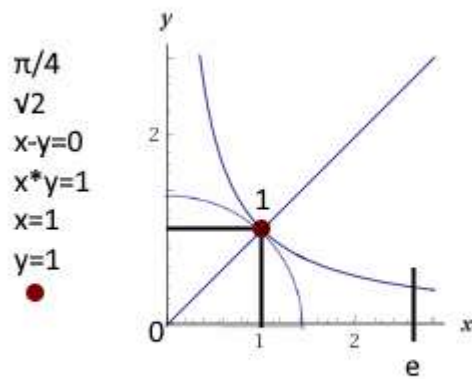
Euler's number e

Pythagoras' constant $\sqrt{2}$

The imaginary unit i

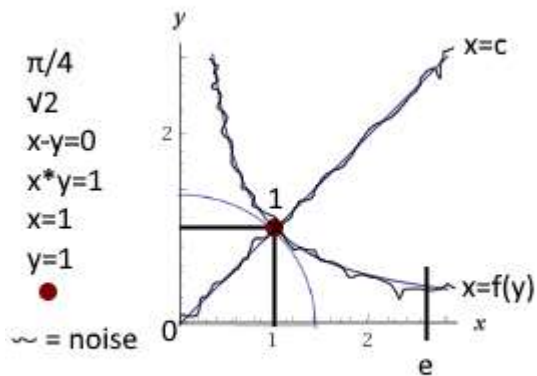
And the relationships between them and $0.0, 1.0, x, 1/x$.

It turns out that there are a simple set of diagrams that link all the above



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Fig 1.



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Fig 2.

What this shows is that manipulating the red point, which is where 'we' are, moves it along the diagonal line as we zoom in and out by $x = 2x$, etc. and along the curve as we apply any function, $x=f(y)$.

$X=f(y)$ 'bends' the curve we are following and this is easy to turn into a 3d surface and even into a 3.5d movie for $x=f(y, dt)$.

The need to separate constants from variables and why we can't use 'zoom' in the same way we can use 'turn' then becomes apparent.

It also means that at 1.0, 1.0 we are always $\sqrt{2}$ away from the origin at 0.0, with Zeno's paradox to actually get there.

It also shows the danger of actually standing at 0.0. All roads are theoretically possible from there. What determines the true direction out is where you came in from, not where you are.

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