Problem free (universal) Com. quantale on X, Y s.t. X, Y are adjoint

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unit $1 \to X \otimes Y$ $\cup$

counit $Y \otimes X \to 1$ $\cap$

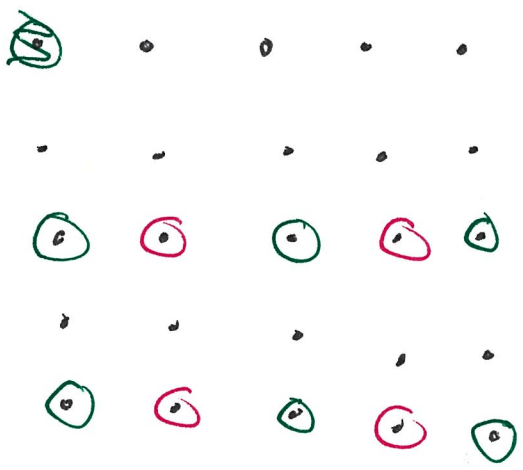
so $X \otimes Y \leq 1 \leq Y \otimes X$

ie. $XY = YX = 1$.

Non-commutative quantales: subsets are languages! beliefs may not be computable

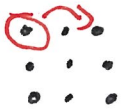
Connection to quantum mechanics semilattice of subspaces of a Hilbert space

$\mathbb{B}[x,y]/x^2+y^2=1$

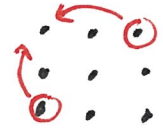


believer:

closed under

1) 

2)

3) 

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This is "the tropical circle":

$\mathbb{B}[X,Y]/X^2+Y^2=1$

In comRing

$k[X,Y]/x^2+y^2=1$

is trigonometric polynomials.

Then $(\cos\theta, \sin\theta)$ is the "generic point on the circle".

James Nolan

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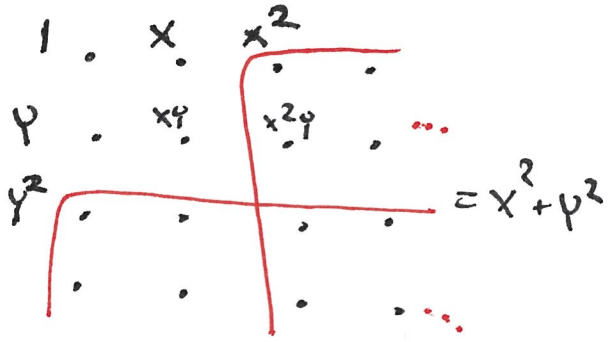
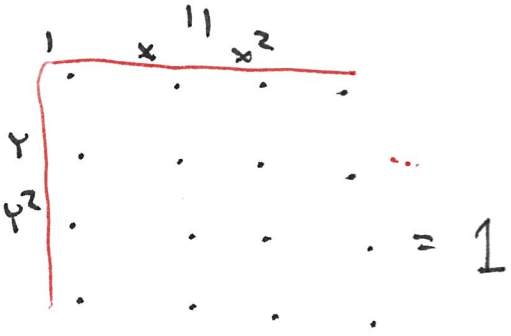
"The constructs are the parts of the generic model"

Language	meaning
Algebra	Geometry
syntactic category	semantic category
Belief method	

The generic model





Examples of the tropical circle

1) Over $\mathbb{B}$:

$$x^2 + y^2 = 1$$

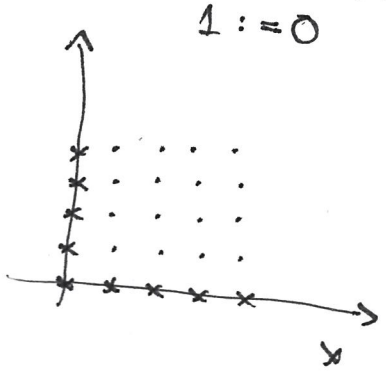
has points $(1,0)$, $(0,1)$ & $(1,1)$.

2) Over $R = \{0, 1, 2, 3, 4, \ldots\}$

+ := min

× := sum at most 4

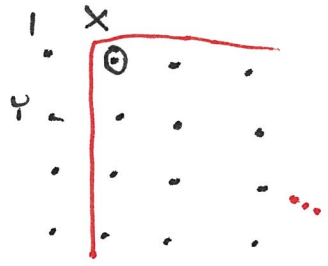
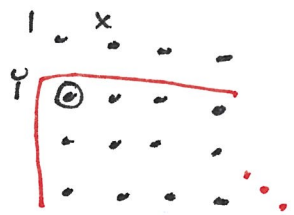
1 := 0



$\min(x^2, y^2) = 0$

$\min(x + x, y + y)$

The generic x:



The generic y