

# MATH 4215H - Truth Assignments III

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or, Chapter II extended to the great beyond.

Idea: If each atomic formula represents a possible statement about the universe (of discourse), then each truth assignment represents a choice of facts <sup>(an fallacies)</sup> about the universe (of discourse).

es The universe of discourse is the solar system,

$A_0$ : The Earth orbits the Sun.

$A_1$ : The Earth is a disk on the back of a giant turtle.

$A_2$ : The Sun orbits the Earth.

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If you have the truth assignment for the universe we're in, then  $A_0$  and  $A_2$  are true and  $A_1$  is false.



In Terry Pratchett's Discworld books

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(my favourite is Guards! Guards!),  
the "Earth" is a disk on the back of (four elephants  
which are on the back of) a giant turtle,

so  $A_0$  is false,  $A_1$  is true, and  $A_2$  is true.

12 Truth assignments select which particular  
universe (of discourse) you're in.

This idea is used as the basis for travelling  
to various mythological and fictional universes in  
a series of stories by Fletcher Pratt and  
L. Sprague de Camp.



The Harold Shea stories are parallel world tales in which universes where magic works coexist with our own, and in which those based on the mythologies, legends, and literary fantasies of our world and can be reached by aligning one's mind to them by a system of symbolic logic. Psychologist Harold Shea and his colleagues Reed Chalmers, Walter Bayard, and Vaclav Polacek (Votsy), travel to several such worlds, joined in the course of their adventures by Belphebe and Florimel of Faerie, who become the wives of Shea and Chalmers, and Pete Brodsky, a policeman who is accidentally swept up into the chaos. The seven stories collected in *The Complete Compleat Enchanter* explore the worlds of Norse mythology in "The Roaring Trumpet", Edmund Spenser's *The Faerie Queene* in "The Mathematics of Magic", Ludovico Ariosto's *Orlando Furioso* (with a brief stop in Samuel Taylor Coleridge's *Kubla Khan*) in "The Castle of Iron", the *Kalevala* in "The Wall of Serpents", Irish mythology in "The Green Magician", L. Frank Baum's *land of Oz* in "Sir Harold and the Gnome King", and Edgar Rice Burroughs's *Barsoom* in "Sir Harold of Zodanga". [From the Wikipedia summary of *The Complete Compleat Enchanter*.]