MathSnacks
Futuramamath

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Inflating Interest

The plot of *Futurama* is Phillip Fry waking up after being frozen for 1000 years. In the episode *A Fishful of Dollars*, Fry collects the compound interest on the 93 cents he left in his bank account, at an annual interest rate of 2.25%. The suggested balance is 4.3 billion dollars (which he blows on a can of anchovies). This is a very good approximation to the true value:

$0.93 \times 1.0225^{1000} = \$ 4283508449.71$

Nonsense Numbers

Playfulness with numbers in *Futurama* include: the news Channel $\sqrt{2}$, the future counterpart of the famous U.S. highway Route 66 shown above; the lubricant π–In–One; πth Avenue; and πKEA, the Futurama evolution of the Swedish furniture chain. The number of the devil, 666, makes an appearance in binary number form. And even $\aleph_0$, the "first" infinite number, features in the name of a cinema complex.

Ripper Reference

The Ultimate Futurama Math page: usuarios.lycos.es/bbrp/mathematics.html

Bizarre Bottles

A Mobius strip has only one one side and only one edge. If you glue two Mobius strips together along their edges you get a Klein bottle. This surface still has only one side and it has no edges. In the episode *Insane in the mainframe*, we see three Futurama beers, including "Klein's" bottled in Klein bottles. The other two beers, "Olde Fortran" and "St. Pauli Exclusion Principle Girl", are still mathematical but come in ordinary bottles.

Taxi Totals

The famous mathematician G. H. Hardy once complained to his colleague, the genius Ramanujan, that the number of the taxi he just took was really boring: 1729. Ramanujan disagreed, immediately recognizing that 1729 is the smallest integer that can be written as the sum of two positive cubes in two different ways:

$$1729 = 1^3 + 12^3 = 9^3 + 10^3$$

After this story, we call the smallest integer that can be written as the sum of two positive cubes in *n* distinct ways the *n*-th taxicab number, T(*n*). So, T(1)=2 and T(2)=1729. The third taxicab number is T(3)= 87539319 $=167^3+436^3=228^3+423^3=255^3+414^3$. T(4) and T(5) are also known, and T(6) was just discovered in March, 2008. No others are known.

In *Xmas Story*, we discover that Bender is son #1729. And, the spaceship Nimbus in *Love's Labours Lost in Space* is also 1729. T(3) appears as a taxi number in *Bender's Big Score*.

In *The Lesser of Two Evils*, Bender and Flexo discover that both their serial numbers are expressible as the sum of two cubes.

Flexo: $3370318 = 119^3 + 119^3$
Bender: $2716057 = 952^3 + (-951)^3$