

DSA Newscast

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Back to Basics: SDN, cont'd

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LAST ISSUE, WE learned the very simple and very regular system of System Dozenal Nomenclature, or SDN. This system allows any number, of any order of magnitude, to be easily and unambiguously named by using a set of only twelve new words (most of which aren't even really new) and two new suffixes, *-qua* and *-cia*. Here they again, for easy reference:

1	Nil	N	0	
2	Un	U	1	
2	Bi	B	2	Positive Powers
2	Tri	T	3	<i>-qua</i>
2	Quad	Q	4	
3	Pent	P	5	
3	Hex	H	6	Negative Powers
3	Sept	S	7	<i>-cia</i>
3	Oct	O	8	
4	Enn	E	9	
4	Dec	D	z	
	Lev	L	ε	

We also saw how these terms could be used to easily name dozenal numbers which are quite difficult to name in standard English; e.g., "7 43ε9 86z2" is "seven octqua four three elv nine eight six ten two."

But SDN is a powerful system not only for numbers, but for numerical concepts in general. Let's put it to work!

GEOMETRY

Geometry is, obviously, full of *shapes*: two-dimensional shapes, which we call *polygons*, and three-dimensional shapes, which we call *polyhedra*, and even four-dimensional shapes (*polychora*) and beyond, though most people will never have a reason to stray beyond polyhedra.

But our naming system for these shapes is irregular at best, and can often cause confusion, particularly among students. As only one example, consider the twenty-sided polygon, or *icosagon*; the name is very clear to a Greek-speaker, but pretty opaque to most others. And while icosagons are rather unusual among polygons, the three-dimensional *icosahedron* is not, and yet the name is equally impenetrable. Indeed, mathematicians will often simply refer to a "fifteen-sided *n*-gon," rather than figure out the proper English name for what they're working with.

Let's compare this to the consistent naming scheme which immediately presents itself thanks to SDN. Using the suffix *-gon* to mean "two-dimensional shape," we can simply attach our number prefixes and get an easy way to refer to *any* polygon, regardless of the number of sides. We can even use the unique one-letter identifiers to abbreviate them!

3	Trigon	T-gon
4	Quadragon	Q-gon
5	Pentagon	P-gon
6	Hexagon	H-gon
7	Septagon	S-gon
8	Octagon	O-gon
9	Ennagon	E-gon
z	Decagon	D-gon
ε	Levagon	L-gon
10	Unnilagon	UN-gon
11	Ununagon	UU-gon
12	Unbigon	UB-gon
. . .		
18	Unoctagon	UO-gon
. . .		
24	Biquadragon	BQ-gon

The Dozenal Society of America is a voluntary, nonprofit educational corporation, organized for the conduct of research and education of the public in the use of dozenal (also called duodecimal or base twelve) in calculations, mathematics, weights and measures, and other branches of pure and applied science.

Notice that this system leaves intact the most common of the normal English names (“pentagon,” “hexagon,” “octagon”), and while a triangle is regularly a “trigon,” there’s certainly nothing wrong with continuing to use “triangle.” But it’s now possible to very easily and very clearly name every possible regular polygon without having to plumb through a Greek-English dictionary, simply by applying a few number words, most of which we knew before we even knew that SDN existed.

Consider also anniversaries. Many towns and cities in the United States celebrate anniversaries like their “hundred and fiftieth” or “two hundred and fiftieth.” (Jamestown, Virginia recently celebrated its “four hundredth.”) But the words for

these anniversaries are opaque, at best. And smaller anniversaries, such as wedding anniversaries, are so difficult that we instead assign them names according to the material from which their customary gifts are made (“golden anniversary”; “diamond jubilee”).

Here’s how SDN can solve the problem:

zth	Tenth	Decennial
10th	Twelfth	Unnilennial
18th	Vigintennial	Unoctennial
20th	N/A	Binilennial
21st	Quadranscentennial	Biunennial
25th	Quasquicentennial	Decpentennial

And so on. The decimal names are often opaque, and it’s not always really clear how they’re put together. How in the world do we form “quasquicentennial” (hundred-twenty-fifth)? And how can we apply those

rules to similar numbers, like two-hundred-twenty-fifth?

In SDN, we simply use the number-words exactly as we use digits, in place notation; so “z5” (ten unqua five; one hundred twenty-five) is simply “decpentennial”. We can easily do this with *any* year, not only the prominent, round ones.

SDN is a powerful tool; please, use it! At least when talking with other dozenalists. We no longer have “decades,” though if we did they’d be called “decennia” (“dec”, ten, + “ennium”, period of years). Instead, we have “unnilennia” (“un”, one, + “nil”, zero, + “ennium”, period of years). Or “unquennia” (“un”, one, + “qua”, 10^1 , + “ennium”, period of years), for short. And so forth.

Happy dozens!

DOZENAL NEWS

BASIC DOZENAL ARITHMETIC PUBLISHED

Your editor has been working on a text for some years, which purports to explore the entirety of basic arithmetic, from counting and numerical notation to the four functions and through logarithms, entirely in the dozenal system. It is now published!

http://gorpub.freeshell.org/books_21.html

The text begins literally at the beginning—counting and how numbers work—and proceeds all the way through logarithms. It has a complete set of exercises for each stage of the journey; it is lushly illustrated with diagrams, tables, and definitional aides; it comes with a complete glossary of arithmetical terms; it is fully cross-referenced; and in its electronic form, it is fully hypertexted. The print version, though black-and-white to keep it reasonably priced, is coil-bound to allow easy use as a textbook.

Consider downloading or buying today!

IGOR BUSHYN ON DOZENAL TIME

“Dozenal Time: A Proposal for a duodecimal method of measuring time,” is available:

<http://www.windows10gadgets.pro/tipstricks/dozenaltime.html>

The article gives a pretty strong, albeit brief, explanation for the dozen’s superiority. It advocates a 20-hour day, each hour being 60 minutes, each of which consists of 60 seconds (as opposed to 50, as it is now).

EDDIE’S MATH AND CALCULATOR BLOG

Edward Shore offers a reasonably lengthy article concerns the workings and virtues

of dozenalism:

<http://edspi31415.blogspot.com/2017/01/base-12-arithmetic-dozenal-society.html>

Containing a few basic tables and digit information, it’s a nice little introduction.

IDEOPHILUS ON DOZENAL NUMERALS

“Ideophilus,” who blogs on very diverse topics, offers an interesting system of composite dozenal numerals based largely on divisibility by three:

<https://ideophilus.wordpress.com/2015/03/09/dozenal-numerals-with-meaningful-components/>

Definitely worth a look for those interested in numeral design.

SOCIETY BUSINESS

NEW DSA BANK ACCOUNT

Our Paypal donations have for some months been bottlenecked and stuck in Paypal itself. This is due to the rigmarole that our prior bank had been putting us through. Your treasurer, Jay Schiffman, has successfully transferred our bank account to PNC, so the flow of donations should begin again soon. Thank you for your patience.

(Please note that your donations are fully intact; we've not lost anything. We just haven't been able to get them out of Paypal and into our bank.)

VOLUNTEERS NEEDED

As mentioned earlier, the DSA is an all-volunteer organization, and we pay no salaries. As a result, everything that we do comes out of the spare time of our members, time that they have to take away from their families, jobs, or other obligations.

We all love dozenals and enjoy assisting the Society in educating people about them; however, as the Society expands and does

more, we find ourselves in need of more help.

Fortunately, the Society has a large membership with a very broad range of professions and experience. If you think you can spare any time or effort for the cause of educating the world about dozenals, please let us know:

contact@dozenal.org

You can help as much or as little as you'd like. Thank you.

OUR NEXT BULLETIN

Work on the next *Duodecimal Bulletin* continues apace. Have an article? A letter containing a question (common or uncommon) you'd like answered? Send them in!

editor@dozenal.org

Remember that our *Bulletin* is designed to cover all aspects of mathematics, from the most basic to the most advanced, from a dozenal perspective, so no question or topic is too easy or too complex. Don't be shy!

POETICAL DIVERSION

TWO LIMERICKS CONCERNING TWELVE

Puny Ten thought that he was the best,
and that all should be at his behest;
but he hasn't a third,
which is clearly absurd
for a base above all of the rest.

Silly Ten claims to set us all free,
from irrational past tyranny;
but to Five we're enslav'd,
and by Ten can't be sav'd,
for the great liberator is Three.

DONATIONS

Members, please remember that while dues are no longer required for membership, we still rely on the generosity of members to keep the DSA going. Donations of any amount, large or small, are welcome and needed.

A donation of \$16; (\$18.) will procure Subscription membership, and entitles the payer to receive both a digital and a paper copy of the *Bulletin* if requested. Other members will receive only a digital copy. To invoke this privilege, please notify the Editor of the Bulletin, John Volan, at

editor@dozenal.org

As members know, we are a volunteer organization which pays no salaries. As such, every penny you donate goes toward furthering the DSA's goals.

It may be worth considering a monthly donation; say, \$3, or \$6, or whatever seems reasonable to you. This can be set up quite easily with Paypal, which is available at our web site.

Of course, if you prefer to donate by check, you may send them to our worthy Treasurer, Jay Schiffman, payable to the Dozenal Society of America, at:

Jay Schiffman
604-36 South Washington
Square, #815
Philadelphia, PA 19106-4115

Remember, too, that the DSA is a 501(c)(3) tax-exempt organization; as such, your contributions may be tax deductible under applicable law.

Thanks again for your assistance; it's your donations that keep the DSA going. We can't keep doing it without you.

FOR SALE

The DSA is pleased to offer the following for sale. These are all either at cost, or the proceeds go to the Society. The exception is *Basic Dozenal Arithmetic*, which is a private production.

Item	Price (\$)
Dozenal Wall Calendar, 1202	9.05
Dozenal Planning Calendar, 1202	8.32
TGM: A Coherent Dozenal Metrology	8.00
Manual of the Dozenal System	3.46
A Dozenal Primer	4.50
Basic Dozenal Arithmetic	15.00

Prices are, unfortunately but by necessity, in decimal. If for some reason the links above do not work, simply go to: <http://www.lulu.com/shop/shop.ep>

and enter the appropriate terms. E.g., searching for “TGM dozenal” will turn up the TGM book.

We hope to offer other titles, and even some other items (such as dozenal clocks and the like), in the future.

EACH ONE, TEACH ONE