

TWELVETY

G'Day! This is your math friend James. Today I am answering a question from Nadia.

IS IT OKAY TO SAY "TWELVETY"?

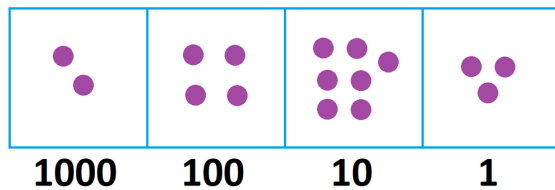
This answer is YES. But the trouble is people probably won't understand what you mean!

What could it mean?

The word—if it really is a word—has two parts. The first is "twelve" and that means, well, the number that is two more than ten. The second part is "ty," which is familiar to us with regard to how we say big numbers. For example, we read this number...

2473

...as "two thousand four hundred seventy three" and visualize it as two thousands, four hundreds, seven tens, and three ones.



When we speak the number 2743 we say out loud the word "thousand" and the word "hundred," but, curiously, we don't say "ten." We say "ty" instead as a shorthand for "ten."

Similarly, **sixty three** is heard as six tens and three,

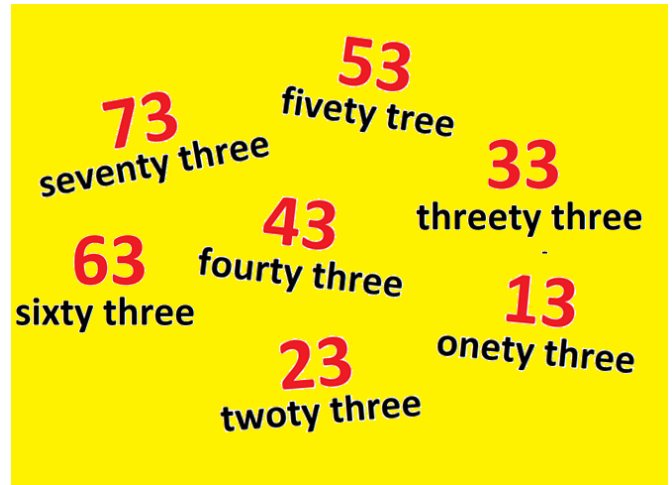
$$6 \times 10 + 3 = 63,$$

and **ninety three** means nine tens and three,

$$9 \times 10 + 3 = 93,$$

and "twelvety three" would be twelve tens and three!

$$12 \times 10 + 3 = 123.$$



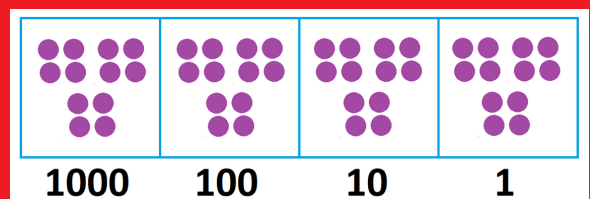
My understanding is that "ty" comes from the word "tig" for ten used in an old version of English spoken some fifteen hundred years ago. And over the centuries we simply started saying "ty" instead of "tig."

Can you look up on the internet to see if my understanding here seems to be correct? (And if I am not correct, please let me know!)

I understand too that people also accepted a word like "twelvety" to mean 120 (twelve tens). We seem to have lost this word today. So "twelvety" sounds strange and wrong to us, but centuries ago it may have been fine!

puzzle #1

Suppose I have twelve thousands and twelve hundreds and twelve tens and twelve ones. What number is "twelve thousand, twelve hundred, and twelvety twelve" really?



The English language we have today for numbers is quite strange in places.

For instance, we say **sixty** for, literally, six tens

$$60 = 6 \times 10,$$

so, in the same way, we really should say "five-ty" for five tens

$$50 = 5 \times 10.$$

But we don't! We say **fifty** instead. I think that's weird!

And four tens really should be "fourty." But for some reason we choose to spell this as **forty**, with out the "u." (I don't know why. Do you?)

And **thirty** really should be "threety" and twenty really should be "twoty."

English is hard!

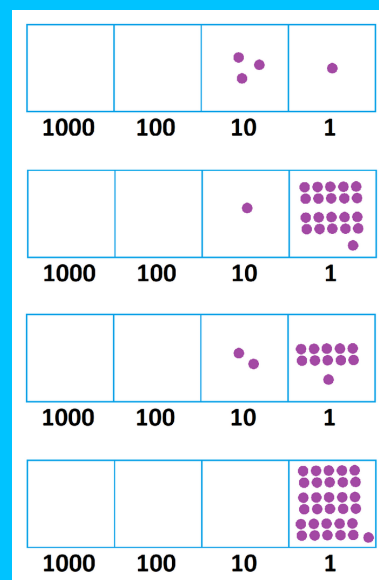
We also say things like **twelve thousand** and **twelve hundred**--they sound okay to our ears -- but we're not allowed to say "twelvety" anymore. That, instead, sounds strange to our ears.

Check out **MATHICAL** for award-winning math books for middle-schoolers and teens, the YouTube channel **NUMBERPHILE** for math videos galore, and **MORE MATH!** for even more resources. Wowza!

Check out **this video** on base 12 numbers from **NUMBERPHILE**.

puzzle #2

There are **FOUR** ways to represent the number thirty-one in a place value chart (if you don't mind sometimes having more than ten dots in a box).



In how many different ways can you represent the number one-hundred-one?

Do you have a math question for me to answer, or try to answer?

Write to me at the website. Each week I'll pick a new question and give my thoughts on it!

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The NMF Weekly is written by mathematician Dr. James Tanton as a resource for friends and fans of the 2021 National Math Festival.



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