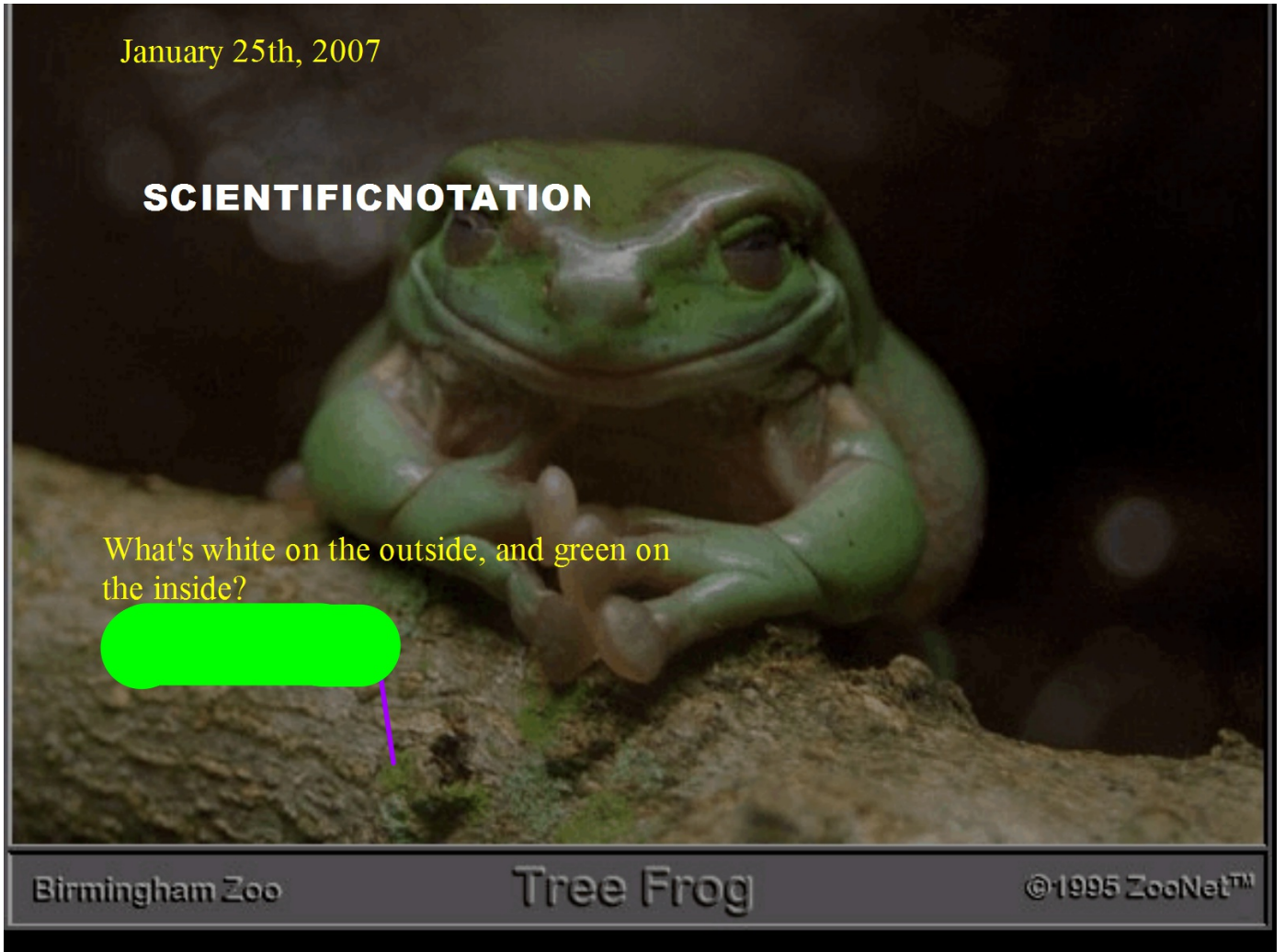


January 25th, 2007

SCIENTIFICNOTATION

What's white on the outside, and green on the inside?



Birmingham Zoo

Tree Frog

©1995 ZooNet™

Warm - Up

1) Which has the same value as 15^4 ?

a) 4×15

b) 4_{15}

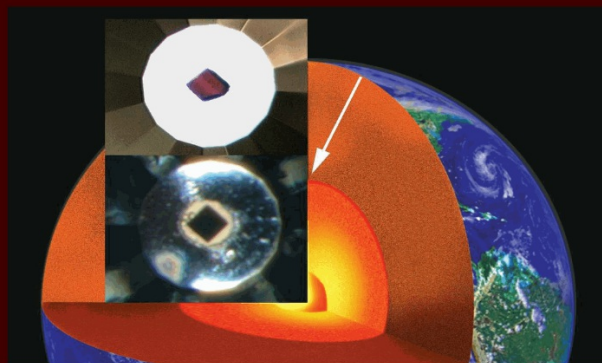
c) $15 + 15 + 15 + 15$

d) $15 \times 15 \times 15 \times 15$

FCAT Questions of the Day 2

2) Scientists believe that the temperature at the core of the Earth is 7.2×10^3 degrees Fahrenheit. What is this temperature in standard notation?

- a) 7200
- b) 720
- c) 72
- c) 7.2



FCAT Questions of the Day 3

3) The Triassic Period of geological history occurred between 208 million and 245 million years ago. What is 245 million written in scientific notation?

- a) 2.45×10^{-8}
- b) 2.45×10^{-5}
- c) 2.45×10^5
- d) 2.45×10^8



FCAT Questions of the Day 4

4) The number of seats in four football stadiums is shown in the table below.

Stadium	Number of Seats
Anchors	4×10^5
Barnabal	4×10^4
Carver	5×10^4
Daton	6×10^3

Which stadium has the greatest number of seats?

- a) Anchors
- b) Barnabal
- c) Carver
- d) Daton

SCIENTIFICNOTATION

A long time ago, in a galaxy far far away, some crazy scientist type people decided to come up with a way to write large numbers without all those nasty zeroes. Today, scientists are still trying to understand why they did this.....

Our journey begins....into scientific notation....right now....
no, not later...i said right now.....push the right arrow....

SCIENTIFICNOTATION

Here's our really big number:

1,234,000,000,000,000,000,000,000,000,000.

I can't even say this number....

Ok, now put a decimal point behind the first number.
No, not that one, the first number..on the left...yeah, the
1.

Next, count all of the numbers behind it. all of them (not
just the ones you want to)

How many are there?? 33

Lastly, you need to write 1.234×10^{33}and that number
you counted it the exponent.....NEXT!!!

Now you try it!!!

$$1,546,000,000,000 = \underline{1.546 \cdot 10^{12}}$$

$$2,345,000 = \underline{2.345 \times 10^6}$$

$$1,000 = \underline{1 \times 10^3}$$

$$10 = \underline{1 \times 10^1}$$

$$98,000 = \underline{9.8 \times 10^4}$$

$$432 = \underline{4.32 \times 10^2}$$

$$15 = \underline{1.5 \times 10^1}$$

0.000000000005 = _____

Put your decimal point behind the first number that is not a zero. I said, after the one that is not a zero, right, the five. Now, count the number of places you moved it.

How many places?? 12

So, it would be 5×10^{-12}

And since we moved it in the opposite direction we would use what???

Your turn again!!

$$0.003 = \underline{3 \times 10^{-3}}$$

$$0.\underline{0000}45 = \underline{4.5 \times 10^{-6}}$$

$$0.0000345 = \underline{3.45 \times 10^{-5}}$$

$$0.00098 = \underline{9.8 \times 10^{-4}}$$

and lastly.....

$$0.00000000004 = \underline{4 \times 10^{-11}}$$

ok, so you have that number like.... 3×10^5 but you don't know what to do with it. Guess what? neither do we, but we have a cure!! We can turn it back into a real number, not an icky science number.

Now, remember which way we moved the zero with a positive exponent?? Now, to put it into standard form, we will do the opposite. Right? right!!!

So.. 300000

3.57×10^7
35700000

4.52×10^{-4}
.000452

Your turn again!!! I didn't rhyme this time!!

1) 4×10^6 4,000,000

2) 9.7×10^3 9,700

3) 8.67×10^5 867,000

4) 1.9×10^{-2} 0.019

5) 2.01×10^{-8} = .0000000201