

***** **Mathematical Weekly** *****
(Week 26)

A, B, C, D in Numbers

Letters A, B, C and D do not appear anywhere in the spellings from 1 to 99 (one, two, ... , ninety-nine), while letter D comes for the first time in 100 (hundred).

Letters A, B and C do not appear anywhere in the spellings from 1 to 999, while letter A comes for the first time in 1000 (thousand).

Letters B and C do not appear anywhere in the spellings from 1 to 999,999,999, while letter B comes for the first time in 1,000,000,000 (billion).

And, surprisingly,

Letter C does not appear anywhere in the spellings from 1 to $10^{27} - 1$ (one, two, ... , ten, twenty, ... , hundred, ... , thousand, ... , million, ... , billion, ... , trillion, ...), until 10^{27} (octillion)!

How large is the number 10^{27} ? Well, think about this: our universe is only 10^{10} -year old with a 10^{27} -meter diameter in size.

References

[1] http://en.wikipedia.org/wiki/Names_of_large_numbers

[2] <http://en.wikipedia.org/wiki/Universe>