

Neutron, Proton and Electron Mass Formula

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Abstract. This is an improved and simplified version of [1]. This version of the formula clearly shows the importance of information in physics, through the logarithm of the base 2 and form of formula, $y=2^x$.

Mathematical constants are: $e=2.71828\dots$, $2\pi=6.283185\dots$ and two physical constants: Proton/electron mass ratio $\mu=1836.152\ 672\ 45\ (75)$ and inverse fine structure constant $\alpha=137.035\ 999\ 074\ (44)$ [2]. The following relation is valid:

$$\gamma = \sqrt{2} \frac{[e^{2\pi} \frac{1}{1+1/(\mu/\alpha'+1)} - 1 + 3 \log_2(2\pi)]}{[(1+\alpha'^2 \log_2(\mu))]} = 1.00137841920390(92)$$

That is neutron/proton mass ratio: $\gamma = 1.001\ 378\ 419\ 17\ (45)$ [2]

From personal experience I can say that few people are interested in reading the explanation for this formula. The perspective of the majority can be summed up by the statement of a reputable professor: “The formula is a coincidence, maybe even a curiosity.” In the past ten months I have published dozens of these “curiosities”, with more than ten significant digits correct, thanks to viXra.org. An attentive reader can notice Planck’s values and nucleus in the exponent [3].

I would like to thank the minority who understood the fundamental importance of the formula and contacted me. I would especially like to express my gratefulness to Mr. Hugh Matlock for determining the uncertainty in this version of the formula.

References:

1. Branko Zivlak - *Neutron, proton and electron mass ratios*, <http://viXra.org/abs/1211.0090>
2. <http://physics.nist.gov/cuu/Constants/>, [update: November 2012].
3. Branko Zivlak - *Calculate Universe 3 – Planck Units*, <http://viXra.org/abs/1305.0145>