ACROSTIC EQUATIONS

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David Morice in WW 96-179 introduced acrostic equations with the only possible perfect example, TEN = **T**wenty + **E**ighty - **N**inety. It's purity is perhaps best left unpolluted by more forced examples. But nooo, I couldn't refrain from offering variously flawed solutions for the other number names. ONE is nearest perfect, flawed only by using itself in its equation. No other numbers are spelled exclusively with the initial letters of English number names. But combining initials with Roman numerals including the Medieval Roman numerals **A = 500, B = 300, G = 400, H = 200, O = 11, P = 400, Q = 500, R = 80, Y = 150** and **Z = 2000** (see WW 95-183) allowed solutions for all other continuously named integers, including 0 and 1 without self-reference, except for those containing U or W (2, 4, etc) since they were not Roman numerals. To solve them, two dirty tricks were invoked: counting **U** as V = **5** (as in Latin—and in English until two centuries ago) and **W** as 'double U' (double V) =**10**. Will purists now begrudge me the fun I had producing a complete acrostic numerology? Current Romans—I V X L C D M and the somewhat current R—were sufficient for 24 (48%) of the list. Appropriate combininations of this list of 50 number names will yield acrostic equations for any named integer thru vigintillions (10^{63}). I've ignored three other named numbers—centillion 10^{103}, googol 10^{100} and googolplex 10^{googol}—as the great chasm between them and vigintillion renders them irrelevant to the continuous numbering problem I've addressed and otherwise solved. (I couldn't solve googol anyhow.) If the intervening numbers have names they're not listed in the number table in Web-3. If readers know of number names over vigintillion, please inform us. Actually it shoudn't be too hard to coin them based on the Latin pattern so far. Never mind, it's more than me job's worth.

Rather than translate the literal equations into numbers I have left it to the reader to 'solve' or confirm these results, making the article something of a puzzle. Please let the editor know if you find any mistakes or serious ambiguities.

ZERO = **Z**ero·**E**ight·**R**·**O**ne; or, without self-reference, ZERO = $\mathbf{Z}^{(\mathbf{Eighty}\,-\,\mathbf{R})}$ - **O**ne
ONE = **O**ne(**N**ine - **E**ight); or, without self-reference, ONE = **O** - **N**inety + **E**ighty
TWO = (**T**en/**W**) + **O**ne
THREE = (**T**housand/**H**undred) + (**R**/**E**ighty) - **E**ight
FOUR = **F**ive - $\mathbf{One}^{\mathbf{UR}}$
FIVE = **F**ourteen - $\mathbf{I}^{\mathbf{V}}$ - **E**ight; or, FIVE = (**F**orty)($\mathbf{I}^{\mathbf{V}}$) ÷ **E**ight
SIX = **S**eventeen - **I** - **X**
SEVEN = (**S**ix - **E**ight - **V**)(**E**ight - **N**ine)
EIGHT = **E**leven - $\mathbf{I}^{\mathbf{GH}}$ - **T**wo
NINE = **N**inety - $\mathbf{I}^{\mathbf{Nineteen}}$ - **E**ighty
TEN = **T**wenty + **E**ighty - **N**inety (Morice)
ELEVEN = -**E**ighty + **L** + (**E**ight·**V**) - **E**ight + **N**ine
TWELVE = **T**hree + **W** - (**E**leven - [**L**/**V**])$^{\mathbf{Eighteen}}$
THIRTEEN = [(**T**wo·**H**undred·**I** - **R**)/**T**en] + (**E**ight/**E**ight)$^{\mathbf{Nine}}$
FOURTEEN = (**F**our/$\mathbf{One}^{\mathbf{UR}}$) + **T**en([**E**leven/**E**leven]$^{\mathbf{Nine}}$)
FIFTEEN = (**F**our)($\mathbf{I}^{\mathbf{Five}}$)(**T**en) - **E**ight - **E**ight - **N**ine

SIXTEEN = (Seventeen - $\mathbf{I}^{\mathbf{X}}$)(Ten$^{\text{Eighty/Eighty}}$ - Nine)

SEVENTEEN = Six + Eleven + V + Eight + Nine - Twelve - (Eighty/Eighty) - Nine

EIGHTEEN = (Eight)($\mathbf{I}^{\mathbf{GH}}$) + Two + Eight$^{(\text{-Eight + Nine})}$

NINETEEN = (Nine + I + Nine)(Eleven - Ten)([Eight/Eight]$^{\text{Nine}}$)

TWENTY = Two·W·([Eight - Nine]$^{\text{Ten+Y}}$)

THIRTY = [Two Hundred ÷ ($\mathbf{I}^{\mathbf{R}}$ x Thousand)] x Y

FORTY = (Fourteen + O)·R·Three ÷ Y

FIFTY = ([{Four + I}/(Five]/Three]) x Y

SIXTY = -(Seventeen + I)(X/Two) + Y

SEVENTY = (Seven + Eleven + V + Eight - Nine)(Ten) - Y

EIGHTY = (Eighteen·$\mathbf{I}^{\mathbf{G}}$) + H + Twelve - Y

NINETY = -Nineteen - I - Nineteen - Eleven - Ten + Y

HUNDRED = H·U + Nine - D + R + Eleven - D

THOUSAND = (Ten·Hundred)(One$^{\text{USA! + Nine + D}}$)

MILLION (10^{6}) = (M·I)(L+L)·I·(One+Nine)

BILLION (10^{9}) = ($\sqrt{[\mathbf{B}/\{\mathbf{I} + (\mathbf{L}/\mathbf{L}) + \mathbf{I}^{\text{One}}\}]}$)$^{\text{Nine}}$

TRILLION (10^{12}) = ($\sqrt{[\text{Twenty} + \mathbf{R}\cdot\mathbf{I}]}$)$^{([\mathbf{L}/\mathbf{L}] + \mathbf{I} + \text{One} + \text{Nine})}$

QUADRILLION (10^{15}) = ($\mathbf{Q}^{\mathbf{U}}$)(A+D)($\mathbf{R}^{\mathbf{I}}$) ÷ (LxL)($\mathbf{I}^{\text{One+Nine}}$)

QUINTILLION (10^{18}) = ($\mathbf{Q} \div \mathbf{U}^{\mathbf{I}}$)$^{\text{Nine}}$ x [(Thousand$^{\mathbf{I}}$) ÷ {(L + $\mathbf{L}^{\mathbf{I}}$)(One + Nine)}]

SEXTILLION (10^{21}) = Seventy - Eighty + X + Thousand$^{(\text{-I - [\{L/L\}\{I/One\}] + Nine})}$

SEPTILLION (10^{24}) = (Seventy - Eighty + $\sqrt{\mathbf{P}}$)$^{(\text{Twelve x [I + \{L/L\}]})}$ x $\mathbf{I}^{\mathbf{O}}$ + Nine

OCTILLION (10^{27}) = (One·C·Ten·I)$^{(\mathbf{L} + \mathbf{L} - [\mathbf{I}/\text{One}] - \text{Ninety})}$

NONILLION (10^{30}) = (Nine + One)E*([Nine + I]·[{L/L} + I + One$^{\text{Nine}}$])

(* E is the old computer style "Exponent" I needed to allow expression of an exponent within an exponent.)

DECILLION (10^{33}) = [D($\sqrt[3]{\text{Eight}}$)/C]$^{(\mathbf{I} + [\mathbf{L}/\mathbf{L}] + \mathbf{I} + \mathbf{O} + \text{Nineteen})}$

UNDECILLION (10^{36}) = U·Naught + [$\sqrt{(\mathbf{D}\cdot\text{Eighty})}$ - C]$^{(\text{-I - [L/L·I] + O + Nine})}$

DUODECILLION (10^{39}) = [$\sqrt{(\mathbf{D}/\mathbf{U}\cdot\text{One})}$]$^{([\{\mathbf{D}+\text{Eighty}\}/\sqrt{\mathbf{C}}] + \mathbf{I} + [\mathbf{L}/\mathbf{L}] - \mathbf{I} - \text{One} - \text{Nineteen})}$

TREDECILLION (10^{42}) = ([$\sqrt[3]{\text{Thousand}}$] x [R/Eighty]$^{\mathbf{D}\cdot\text{Eleven}}$)E([C·{$\mathbf{I}^{\mathbf{L}}$}] - L·I + O - Nineteen)

QUATTUORDECILLION (10^{45}) = (Q/U)(A·Twenty/Thousand)E(-U - [One$^{\mathbf{R}\cdot\mathbf{D}\cdot\text{Eight}\cdot\mathbf{C}}$] - $\mathbf{I}^{\mathbf{L}}$ + $\mathbf{L}^{\mathbf{I}}$ + O - Nine)

QUINDECILLION (10^{48}) = (Q + $\sqrt{[\mathbf{U}\{\mathbf{I} + \text{Nineteen}\}]}$ - D)$^{(\text{Eight})(\mathbf{C} - \mathbf{I} - \mathbf{L} - \mathbf{L} - \mathbf{I} - \text{One} + \text{Nine})}$

or QUINDECILLION = Quattuordecillion x ([U·{$\mathbf{I}^{\{\text{Ninety+D+Eighty+C}\}}$ + I}]E[{L/L} + I + One$^{\text{Nine}}$])

SEXDECILLION (10^{51}) = ([{Seventeen + Eight}{X/D}]·[Eighteen + {C·I/L}])E(L + $\mathbf{I}^{\text{One+Nine}}$)

SEPTENDECILLION (10^{54}) =

Sexdecillion x ([{(Eighty + P + Twenty - Eighty + Ninety - D) x Eleven} - C]E[{I·L/L} + I + One$^{\text{Nine}}$])

OCTODECILLION (10^{57}) = (Octillion/C)(Thousand·Octillion·D·[$\sqrt[3]{\text{Eight}}$]/C)([I{L/L}I·One] + Nine)

NOVEMDECILLION (10^{60}) =

(Nine + One)(Vigintillion) ÷ ([Eight·M ÷ D·Eight]·[C·I·{L+L}] ÷ [I + One$^{\text{Nine}}$])

VIGINTILLION (10^{63}) = V - $\mathbf{I}^{\mathbf{G}}$ - I + (Novemdecillion·Ten·I·[L+L]) - I - O + Nine