

ALL NUMBERS LESS THAN 100 ARE INTERESTING?

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In the Feb 1977 Word Ways, Dmitri Borgmann wrote "All English words and names--all, without a single exception--are logologically interesting." He didn't define interestingness, and his examples didn't clarify matters. In the May 1980 Word Ways, Philip Cohen attempted to codify the term, applying it to a finite set of words (the 50 states) with some success. I decided to apply the concept to a different set: the number names ONE, TWO, ... , NINETY-NINE. Mathematics plays an important part in wordplay. Because both logological and numerical properties can be considered, interestingness takes many strange twists and turns.

"Interesting" means that a number name has a property that makes it the only example, or the highest or the lowest example in numerical value, or the longest or the shortest example in letter-count, with respect to all number names through one vigintillion (not just those less than one hundred). All wordplay must stay within the boundaries of the set of number names; non-numeric dictionary words aren't included (for example, "ONE subtransposes to TEN" qualifies, but "ONE transposes to EON" does not). Numerical values of the numbers and their separate digits are used only when they relate to the letters (for example, although the names of the 52 cards in a deck are spelled with 52 letters, this is not a property of the number name FIFTY-TWO).

Definitions of Terms:

all-line letters = AEFHIKLMNTVWXYZ

alphabetic values of letters = A=1, B=2, ..., Z=26

compass word = one containing N,E,W and S

non-compass word = one now containing N,E,W or S

density of word = average alphabetic value of its letters

(FOUR: $(6+15+21+18)/4 = 15$)

kangaroo word = one containing a related word (joey) inside (InDoLEnt)

letter-shift = letter combination generated by shifting each letter of a

word the same number of alphabetic steps (ODD-PEE, PECAN-TIGER)

mirror letters = AHIMOTUVWXYZ (right-left symmetry)

narrow letters = acemnorsuvwxyz (compare tall letters)

rollercoaster word = one with letters alphabetically increasing, then

decreasing (or vice versa) (BELTED: BELT, then TED)

revised alphabetic values of letters = arrange letters in order of first

appearance in number names: ONETWHRFUIVSXGLYDAMBQPC, then set

O=1, N=2, E=3, T=4, ...

Romantic word = letters read off in order form a Roman numeral (fIVE)

multi-Romantic word = each number unit is Romantic (thIrty-sIX)

tall letters = bdfghijklpqty (compare narrow letters)

typewriter values of letters = letters labeled by columns on typewriter keyboard: (2=WSY, 3=EDC, 4=RFV, 5=TGB, 6=YHN, 7=UJM, 8=IK, 9=OL)
 univocalic word = one using only one vowel (sEnSElEss, sEvEn)
 upside-down letters = HINOSXZ (up-down symmetry)
 vicinal word = each letter has alphabetic neighbor (THIRTY-SIX hi,rst,xy)
 unit = any one of the 39 linguistic components of a number-name (ONE, TWO, ..., NINETEEN, TWENTY, THIRTY, ..., HUNDRED, THOUSAND, ..., VIGINTILLION)
 zigzag word = each letter is alternately higher and lower in the alphabet than its predecessor (LUCID: LU up, UC down, CI up, ID down)

- ONE highest vowel-to-consonant ratio (2:1)
 lowest total alphabetic value of letters (15+14+5 = 34)
 Morse code is all dashes, then all dots (--- -· ·)
 number with letters in decreasing alphabetic order
- TWO all letters from last half of alphabet (N to Z)
 all letters are mirror letters
 typed on only one row of typewriter keyboard
- THREE begins with more than one consonant, ends with more than one vowel (cf EIGHT)
- FOUR only truthful number (counts its own letters)
 lowest bisquare (square number, square number of letters)
- FIVE lowest Romantic number (fIVe)
 alphabetic value of final letter equals the number (E=5)
- SIX all letters are upside-down letters
 letters alternate between tall and narrow
- SEVEN lowest whose letters have all appeared in previous numbers
 longest with letters alternating from first half and last half of the alphabet (A-M, N-Z)
- EIGHT first number in number list arranged alphabetically
 begins with more than one vowel, ends with more than one consonant (cf THREE)
 highest number whose Scrabble values multiply to itself (1x1x2x4x1)
- NINE monoconsonantal number name
 highest number with letters typed alternately on two rows of the typewriter keyboard
- TEN highest number requiring a different telephone keypad entry for each letter
 Morse code is alternating dots and dashes (- · -·)
- 11 highest number with letter values alternating odd and even (5,12,5,22,5,14)
- 12 sum of its Scrabble values is truthful (1+4+1+1+4+1 = 12)
- 13 kangaroo word with two joeys that add to the number itself (THIRTEEN contains TEN, THREE)
- 14 highest number with alternating odd and even sums of adjacent letters' alphabetic values (P+O=21, O+U=36, U+R=39, R+T=38, ...)
- 15 Morse code symbols total the number itself (··-· ·· ·-· - · · -·)
- 16 Romantic number whose Roman numeral added to the number of letters in the word yields its value (IX + 7 = 16)

- 17 highest and longest (most letters) univocalic (sEvEntEEn)
- 18 least dense number: $(5+9+7+8+20+5+5+14)/8 = 9.125$
- 19 the difference between its digits equals the number of letters in
the word (8)
- 20 alphabetic value of initial letter equals the number (T=20)
- 21 lowest multi-unit square (letters can be arranged in a square
array in which each new unit starts a new line)(TWE/NTY/ONE)
- 22 lowest number in which the vowel total equals the letter-count
of one unit, and the consonant total equals the letter-count
of the other (22 has six consonants and three vowels)
- 23 lowest reverse snowball (second unit is one letter shorter than
the first unit) (TWENTY, THREE)
- 24 lowest number with two units having no common letters
- 25 sum of alphabetic values of first, last letters equals the number
itself (T=20, E=5)
- 26 lowest compass word (tWENTy-Six)
- 27 Romantic number whose Roman numeral's alphabetic and numerical
values add up to the number itself (V=22, 5)
- 28 highest number in which the number of vowels times the number
of consonants equals the number (4 vowels x 7 consonants =28)
- 29 all-line letter word in which the number of line-strokes equals the
number itself (T=2 strokes, W=4 strokes, E= 4 strokes, ...)
- 30 highest number that letter-shifts to a full Roman transposal
(THIRTY, four steps to XLMVXC, transposable to MCLXXV=1175)
- 31 lowest number in which all 26 letter-shifts contain one or more
Roman letters (thIrty-one, uIjsuz-pof, VjktVa-qqg, ...)
- 32 if odd letters are set equal to 1 and even letters, to 2, then the
product multiplies to the number ($2 \times 2 \times 1 \times 2 \times 2 \times 1 \times 2 \times 1 \times 1 = 32$)
- 33 highest number having a letter-shift consisting only of Roman
letters (XLMVXC-XLVII)
- 34 lowest number having rollercoaster words in each unit (TH,HIRTY,
FOU,UR)
- 35 lowest multi-Romantic number (thIrty, fIVE)
- 36 lowest vicinal number (THIRTY-SIX hi, rst, xy)
- 37 highest number with matching number of Braille dots
- 38 lowest multi-Romantic number with same number in each unit
(thIrty, eIght)
- 39 lowest Romantic number whose Roman numeral is equal to the
difference in letter-counts of the two units (thIrty-nIne = 6-4)
- 40 number with letters in increasing alphabetic order
- 41 highest rollercoaster number (FORTY,YONE)
- 42 highest number forming a letter-digit rectangle (FORT/YTWO forms
a 4x2 rectangle)
- 43 lowest number with crashing letters (the two units have the same
letter in the same position: foRty, thRee)
- 44 highest number having no Roman letters (IVXLCDM)
- 45 highest dishonest number: each digit counts the number of letters
in the other unit (FORTY has 5 letters, FIVE has 4 letters)

- 46 lowest number containing both tic-tac-toe letters (O,X)
- 47 lowest number with no crashing letters in its units (forty,seven)
- 48 each letter of the second unit is earlier in the alphabet than the corresponding one in the first unit (E before F, I before O, ...)
- 49 lowest half-truthful number (one unit counts the number of letters in the full number)(FORTY-NINE has 9 letters)
- 50 all letters are tall letters
- 51 lowest number with a tall-letter unit and a narrow-letter unit
- 52 highest number whose letters alternate two Scrabble values
(4,1,4,1,4, 1,4,1)
- 53 alphabetic value of one unit minus alphabetic value of the other is equal to the number of letters (FIFTY[=66] - THREE[=56] = 10)
- 54 highest non-compass number (no N,E,S,W letters)
- 55 lowest multi-Romantic number whose Roman numerals add to the letter-count of one unit, multiply to the letter-count of the other (fifty-five: 1+4=5, 1x4=4)
- 56 multi-Romantic number whose Roman numerals subtract to equal the letter-count (fifty-six: 9-1=8)
- 57 multi-Romantic number whose Roman numerals multiply to equal the letter-count of either unit (fifty-seven: 1x5=5)
- 58 highest number with string of alphabetically-consecutive letters equal to the letter-count of either unit (Fifty-EIGHT: EFGHI)
- 59 lowest number in which each unit starts with palindromic trigram
- 60 most dense number: $(19+9+24+20+25)/5 = 19.2$
- 61 lowest number whose revised alphabetic values add up to the number itself: $12+10+13+4+16+1+2+3 = 61$
- 62 highest zigzag number (SI down, IX up, XT down, TY up, YT down...)
- 63 Romantic number with highest Roman numeral that divides into the number with no remainder (sIXty-three: $63/9 = 7$)
- 64 highest Romantic number whose Roman numeral counts the letters in the number (sIXty-four has 9 letters)
- 65 multi-Romantic number whose first Roman numeral counts the letters in the whole number, and the second Roman numeral counts the letters in the unit it occupies (sIXty-five, 9 and 4 letters)
- 66 highest number whose vowels and consonants are typed with different hands on the typewriter keyboard
- 67 longest number with each unit a zigzag word (SE down, EV up, ...)
- 68 multi-Romantic number whose Roman numbers add to the letter-count of the number (IX + I = 10)
- 69 number of letters is given by Roman numeral in first unit, and the numerical value of the second unit (IX, NINE)
- 70 Romantic number in which the Roman numeral counts the letters in an Arabic number, which in turn counts the letters in the original number (seVenty; SEVEN has 5 letters; 70 has 7 letters)
- 71 Morse code of first unit starts with greatest possible number of dots (... · --- · - · - ---), and Morse code of second unit starts with greatest possible number of dashes (--- · ·)
- 72 letter-shift of first unit (SEVENTY to TFWFOUZ) has numerical joey

- (TWO) describing the second unit
- 73 digits multiply to form reverse of number's length ($7 \times 3 = 21$, to 12)
- 74 highest number in which each digit counts the number of letters of its unit (SEVENTY has 7 letters, FOUR has 4)
- 75 multi-Romantic number whose first Roman numeral equals the numerical value of the second unit, and second Roman numeral equals the letter-count in the second unit (V=5; IV letters)
- 76 lowest number transposable to a lower one (SIXTY-SEVEN)
- 77 longest multi-Romantic with same Roman numeral in each unit (V,V)
- 78 two central trigrams have equal alphabetic values, which sum to the number itself (ENT = $5+14+20 = 39$, YEI = $25+6+9 = 39$)
- 79 ? ? ?
- 80 typed symmetrically on keyboard (each keystroke by a finger on the left hand is echoed by the same finger on the right)
- 81 lowest square root word (letter-count = square root of number)
- 82 highest number with first-half letters (A-M) on left, second-half letters (N-Z) on the right (eighTY-TWO)
- 83 typewriter value of letters contains a double alternating monotony (3,8,5,6,5,6,5,6,4,3,3 contains 5,6,5,6,5,6)
- 84 highest number with minimum substitute-letter transposal (U to alphabetic neighbor T, transpose EIGHTY-FOTR to FORTY-EIGHT).
- 85 highest number whose revised alphabetic values add up to the number itself: $3+10+14+6+4+16+8+10+11+3 = 85$
- 86 two adjacent trigrams in which each letter has an alphabetic neighbor in the other (eighTY-SIX: H by I, T by S, Y by X)
- 87 each letter in the shorter unit lies outside the alphabetic range of the corresponding letter-pair in the longer unit (S outside E-I, E outside I-G, V outside G-H, E outside H-T, N outside T-Y)
- 88 highest number typed with alternating hands
- 89 bigrams in first unit have increasing alphabetic values, in second unit decreasing ones (EI=14,IG=16,GH=17,HT=28,TY=45; NI=23,NE=19)
- 90 successive terminal bigrams have alphabetic values which linearly decrease (N+Y=39, I+T=29, N+E=19)
- 91 alternating even and odd letters in one unit, alternating odd and even letters in the other
- 92 highest number with substitute-letter transposal to another number (I to E, transpose NENETY-TWO to TWENTY-ONE)
- 93 longest number with no letters having alphabetic neighbors
- 94 lowest number containing a reversed number giving the letter-count (niNETy-four has TEN letters)
- 95 highest number with all-line letters which have vertical lines equal to the letter-count (10)
- 96 highest multi-Romantic number whose Roman numerals multiply to the letter-count (I times IX = 9)
- 97 longest number with alternating vowels and consonants
- 98 longest kangaroo number with twin reverse joeys (NiNETy-EighT)
- 99 each unit begins with the same palindromic trigram (NIN)