

LETTER SUMS AND DIFFERENCES

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In the November 2004 Kickshaws, Dave Morice pointed out that the first two letters of HOW add to the third ($8+15=23$), and that the first two letters of WHO subtract to the third ($23-15=8$). This idea can be extended to longer words; any two consecutive letters in a word must add (or subtract) to the next letter, such as CADE, $3+1=4$ followed by $1+4=5$. To allow for sums greater than 26, use the circular alphabet: $A=1, B=2, \dots, Z=26, A=27$, etc. The same stratagem is used to create positive differences, such as SARI, $19-1=18$ followed by $27-18=9$.

I further generalize letter sums and differences by offsetting the letters against their numerical values; for example, with offset 1, $A=26, B=1, C=2, \dots, Z=25$, leading for example to HELP, $7+4=11$ followed by $4+11=15$.

Letter Sums

Offset 0: cade howl msno orgy otic poet waxy
 Offset 1: anna faff help lall sass mammy
 Offset 2: boob booboo
 Offset 3: ford hint pert quia tarp fords
 Offset 4: cede cony glow meno rest
 Offset 5: blip djin ells skye skyey varna
 Offset 6: army clio feed jimp loud move ouds peon warm
 Offset 7: dolt ques unbid
 Offset 8: idea limn ruer situ snye sale limns
 Offset 9: bibb inns phon zizz
 Offset 10: cuny fawn grow ions jeez kabs milk odic pion wane pions
 Offset 11: macs mega abri holp
 Offset 12: dash eyre foil heat mops roux yerk
 Offset 13: fled port raft ywis padri
 Offset 14: clay code lect mono stye
 Offset 15: dodd fard gums hunt loll odds hunts totty
 Offset 16: chum epee ilea leap maxi poon
 Offset 17: reft gese
 Offset 18: gapy jump laud wine dwine
 Offset 19: benz fred gyms indy pron libra
 Offset 20: dish piel piet rust worm rust peals rusts sonic
 Offset 21: gams hant herb lull mumm ogam rift suss herby miaou ogams rifted
 Offset 22: cuba eire leud york sole
 Offset 23: dahl kiwi olds told
 Offset 24: eels fail genu maps meta pial soja
 Offset 25: blob gems hent part

Letter Differences

- Offset 0: alow bomb chum jeez sari tsar utas wave whos yips
 Offset 1: anna awes erne owse pelt phiz yeuk yoke pelts verne
 Offset 2: anoa boob cady deaf lamp life mano ohia sati yves booboo
 Offset 3: dull pent prat
 Offset 4: culm feed show
 Offset 5: cagy halt koas lapp quay scum
 Offset 6: ansa cham erse hush paul roil wong Paulo
 Offset 7: anta bunn ciao hant idly meow mike pert trip aecia
 Offset 8: apse atom awls mile pawl pest sloe wade yore pawls
 Offset 9: caky mime quey roll smog syce nerve petti
 Offset 10: ache awns coax chem etui mine tach whys khmer mines tache
 Offset 11: burn elds hart ritz scam wage
 Offset 12: hast king sadi kings
 Offset 13: delf emeu fend mayo trop yowe delfs
 Offset 14: auto feod mire poon rear slue yids autos slued
 Offset 15: acme coca fill herb mise smug wake
 Offset 16: acne crag coda gink inks mite pent shaw sizy wale codas ginks
 Offset 17: fred jolt porn prot rotl syke wame
 Offset 18: dual elks vein wane yelk yelks
 Offset 19: ells epha inns odds saki
 Offset 20: acre anga cavy elms feud hugh kops numb odes pail syne shew
 Offset 21: eyas
 Offset 22: duel erie irma kors ware aerie
 Offset 23: beth koss lund pall soak
 Offset 24: cola enow haet lour spam temp yerker yins clour tempus yerker
 Offset 25: coma eyes haft mako mice sock trap jotty

And what about the question Dave raised in Kickshaws concerning HOW-WHO? This pair is matched by ENS-SEN, TAU-UTA and ODS-SOD, plus ABC-CAB if the former is admitted as a word (usually all caps, and spelled out by pronouncing the letters). If the circular alphabet is used, EVA-AVE, IRA-AIR, POA -OAP and OWL-LOW also qualify.