

On the Subject of Functions

I know exactly how to get 8 from 1 and 3!

Type "5,8478" and query and find the result in the following list. This tells you which function is in use.

1	2	3	4	5	○
6	7	8	9	0	
Q	C	,		S	
1234	,,	1234			
123456789012					
123	X	123			

1	#10	2	#19	483	#4	808	#28
1010	#27	23	#31	5	#3	809	#29
11	#36	29	#20	51824171	#38	823	#2
123690	#21	3	#30	51824271	#24	8473	#37
135	#18	390	#17	6	#7	8478	#22
14383774	#41	4	#14	695	#13	8483	#39
16	#11	40	#34	7	#0	84838473	#12
1600	#32	420	#23	71876509	#35	9	#26
1695	#40	42390	#16	71961289	#5	92	#33
16951	#8	430	#1	8	#6	94	#25
sum of times each digit (45788) appears in serial number			#9	number of lit indicators times 63			#15

- Use additional queries to differentiate functions #9 and #15 from the others if necessary.
- Use the letter on the bottom row along with Table 2, finding an offset to apply to the function number, to find your final function. Wrap around as necessary.
- Submit the answer to the final function using the bottom displays as input.

Table 1: Functions

#0: Digital root of ((a+b) squared)	#1: a*b, even-position digits removed
#2: 8, then number of odd digits, then number of even digits	#3: Digital root of (a+b)
#4: (a+b) modulo 1000	#5: (a+b) squared
#6: Highest digit	#7: Number of different digits missing
#8: (Larger*2) - Smaller	#9: Sum of times each digit appears in serial number
#10: Number of even numbers	#11: Dots found in digits when using morse code
#12: a+b, then a-b	#13: (Integer of (Larger / smaller)) modulo 1000
#14: Digital root of a-b	#15: Lit indicators times 63
#16: a*b	#17: (a*b) modulo 1000
#18: (sum of a's digits) * (sum of b's digits)	#19: Smaller - (Larger modulo smaller)
#20: a*b, odd-position digits removed	#21: All digits missing from 1 to 0
#22: Lunar Addition	#23: a*b, odd digits removed
#24: (Digit, then 2 if even and 1 if odd) for all digits in order	#25: sqrt(a) + sqrt(b)
#26: Digital root of (a*b)	#27: Digits times 202
#28: 808	#29: 810 - (Number of numbers below 100)
#30: Larger modulo smaller	#31: Sum of letters in each digit
#32: (Product of first and last digit of a) * (Product of first and last digit of b)	#33: sqrt(a+b)
#34: Product of first and last digits overall	#35: a squared + b squared
#36: (a+b) modulo 12	#37: a-b
#38: (Digit, then number of that digit) for all digits in order	#39: a+b
#40: Larger divided by smaller	#41: (a+b) * (Larger divided by smaller)

Digital Root: Sum of digits until a single digit is obtained. D.R. of 129 is 3.

Modulo: The remainder from a division problem. 10 modulo 3 is 1.

Absolute Value or $|x|$: The difference of x and 0. $|2-6| = 4$.

$\text{sqrt}(x)$: Square root. $\text{sqrt}(9) = 3$.

Squared: Multiplied by itself. 5 squared is 25.

Lunar Addition: Addition but in each place, take the higher number instead of adding. In Lunar Addition, $184+229 = 289$.

Table 2: Letter Adjustments

Condition	True	False
A: KBU or M in SN?	+6	-4
B: Battery, indicator, or port count = 2?	+2	-3
C: First character in SN a digit?	+5	-4
D: Lit BOB indicator?	+8	-8
E: Unlit BOB indicator?	+6	-2
F: First character in SN a letter?	+6	-5
G: Parallel port but no Serial port?	+1	-5
H: At least one empty port plate?	+1	-3
I: No batteries?	+1	+5
J: Vowel in SN?	+5	-3
K: Indicators > 3?	+4	-1
L: Battery count even?	+6	+7
M: Ports > indicators?	+3	-7
N: More lit than unlit indicators?	+3	-5
O: Indicators > batteries?	+6	-1
P: Indicator count even?	+2	-3
Q: ERI or S in SN?	+1	-3
R: Exactly 3 letters in SN?	+3	-2
S: Batteries > ports?	+2	+4
T: Batteries > 4?	+4	+1
U: Lit and unlit indicator count equal?	+2	-2
V: JQX or Z in SN?	+7	+1
W: At least three ports?	+3	-5
X: No indicators?	+3	-3
Y: 4+ SN digits?	+4	-1
Z: No ports?	+5	-1