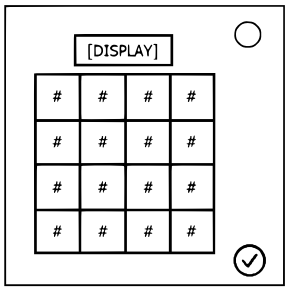
On the Subject of Abstract Sequences



In art, "abstract" pieces are often hard to percieve. In computer science, abstractions are made to accomplish a task. So, why not have both on a bomb?

Refer to Appendix F1B for definitions of mathematical-related terminology.

This module consists of a number display, 16 numbered buttons, and 1 submit button. To solve the module, you will need to find the correct equation, choose the numbers in a certain order, then hit the check mark to submit.

PART I - DECLARATION OF VARIABLES

Use the following table to determine what the correct values for the variables are. Take the reading from the 3 applicable columns, and calculate the mean of the data set.

Variables	If the display is...		If the absolute value of the sum of the first column is...		If the last digit of the serial number is...	
	Prime	Composite	Even	Odd	0 - 4	5 - 9
x	3	21	30	33	42	12
y	39	48	51	9	24	18
z	27	15	36	45	6	0

If any column in the following table is applicable, edit the variables as listed:

Variable Adjustments	Visible Port Types		Visible Indicators	
	RCA, DVI, or Parallel	PS2, Serial, or RJ45	IND, BOB, or MSA	SND, CAR, or NSA
x	-2	-6	+6	+1
y	+3	-1	-5	-3
z	+5	-3	+2	-4

Use the smallest number to be the **first term** of the sequence (a_1).

PART II - ESTABLISHING THE USED FORMULA

The following table will help create your sequence formula. Use the left side of the table to determine the first half of your formula, and the right side for the second half.

First Half		# OF BATTERY HOLDERS		
		0 - 1	2 - 3	4+
DISPLAY VALUE	0 - 19	x+7	8y	a_1*n
	20 - 39	z+n	z-y	x/3
	40 - 59	z(n-1)	2z	z^2
	60 - 79	x^2	4n	n^2
	80 - 99	y^2	a_1*4	5z

Second Half		PORTS + PORT PLATES		
		0 - 4	5 - 8	9+
# OF STRIKES	0 - 1	n*5	n+2	6z-n
	2 - 3	n-3	n/4	x+y+n
	4 - 5	a_1	-n+5	y+2z
	6 - 7	x+2y	5z	z+5n
	8+	x+4	x*2n	yz+2n

What connects these two halves is up to the table below. If there is more than one or no applicable columns/rows, use the respective "Otherwise..."

	>1 unique port	Sum of serial # numbers > 14	>10 modules on the bomb	Otherwise...
>3 battery holders	+	+	*	/
2+ unlit indicators	/	+	-	*
Displayed number is odd	-	*	/	-
Otherwise...	*	/	-	+

PART III - CALCULATING YOUR TERMS

Plug in each integer starting from 2 upwards for *n* (The first term was already calculated), up to n = 20. Only use the integer, and take the number's 2 least significant digits to create a list of all the results (or terms). If any term is less than 0, multiply by -1. **IF USING DIVISION IN THE FORMULA, SKIP USING THE NTH TERM IF ITS CALCULATED DENOMINATOR IS EQUAL TO ZERO.**

However, if exactly 3 out of the following 4 conditionals are true, forget all rules up to this point; your sequence is the first 20 terms of the Fibonacci sequence, starting with 1 (still use the 2 least significant digits):

- The amount of batteries, when added to the amount of battery holders, is a prime number.
- The digital root of the displayed number is a prime number.
- The amount of solved modules is a prime number.
- The sum of the 4 corner buttons is a prime number.

Once the terms have been calculated, press all numbers that do not appear in the sequence. Once you press a button, all labels on the buttons will disappear. You cannot unselect a button once it has been selected, so remember where the labels are, and be careful what you press. If the amount of minutes on the bomb timer is even, press these numbers in ascending order, otherwise, in descending order.

Appendix F1B: Mathematical Terms

a_n: The nth term of a sequence, usually in reference to arithmetic sequences. (a_n would denote the third term in a sequence.)

Composite: an integer that can be divided by a positive integer other than 1 and itself, and remain an integer. (81 is composite, because it can be divided by 1, 3, 9, 27, and 81, and remains an integer.)

Digital Root: The repeated process of summing the individual digits in a number, until the sum becomes a single digit. (The digital root of 1337 would be equivalent to 5; 1337 -> 1 + 3 + 3 + 7 -> 14 -> 1 + 4 -> 5).

Fibonacci Sequence: A famous mathematical sequence that revolves around summing two consecutive terms in the sequence to get the next (0+1 = 1, 1+1 = 2, 1+2 = 3, 2+3 = 5, 3+5 = 8, 5+8 = 13, 8+13 = 21, etc.)

Integer: a whole number (3, 6, 12, 19, etc.)

Mean: the value obtained by dividing the sum of several quantities by the number of quantities; an average. (The mean of 9, 12, & 18 would be calculated by doing (9+12+18)/3, because there are 3 data points, which would equal 13.)

Prime: an integer that cannot be divided by a positive integer other than 1 and itself, and remain an integer. (3301 is prime, because it can only be divided by 1 or 3301 and remain a whole number.)

Term: an individual quantity in a ratio, series, or mathematical expression. (The second term of the sequence 4, 8, 15, 16, 23, 42 would be 8.)

x^y: A variable raised to a power, or exponent. The base (x) is multiplied by itself by the amount of times listed in the exponent (y). 5^3 would mean 5*5*5, which equals 125.