On the Subject of Variety

I swear that module didn't have a maze last time I looked...

Begin with a list of the items on the module, sorted into the order shown on the right.

Observe the number displayed at the top of the module. Decoding this number involves an iterative process. In each iteration, a number n is relevant. Perform these calcuations:

- Take the number <u>modulo</u> n to obtain a value.
- <u>Divide</u> the number by n (rounding down) to obtain the number for the next iteration.

First, apply the iteration with n equal to the number of items in your list. The value obtained identifies which item to interact with, numbered from 0.

Next, apply the iteration in a way described by the below section for the relevant item. In general, n is the number of states the item can be in and the value identifies the state the item must be set to.

Afterwards, remove the item from your list. Continue this process, each time with the reduced list of remaining items.

Variety will only issue a strike if an item is interacted with while an item earlier in this process is in an invalid state. Incorrectly cut wires will only cause one strike. All other types of items must be corrected to avoid further strikes.

In the special case where the last item is put into the correct state, but an incorrectly cut wire causes a strike, an item may need to have its state changed and changed back to disarm the module.
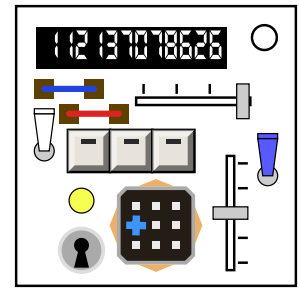
- Yellow wire
- Blue switch
- LED
- 4×4 maze
- Vertical slider
- Blue wire
- Knob
- Red switch
- 3×4 maze (tall)
- Blue button
- Yellow switch
- Red keypad
- Yellow button
- Key-in-lock
- 4×1 white keypad (wide)
- Blue keypad
- 4×3 maze (wide)
- 1×4 white keypad (tall)
- 2×2 white keypad
- Black wire
- Horizontal slider
- White switch
- Red wire
- White wire
- Yellow keypad
- Red button
- Letter display
- White button
- 3×3 maze
- Digit display
- Braille display
- 3×1 white keypad (wide)
- 1×3 white keypad (tall)

Sliders

n is the number of tickmarks. The states are numbered from 0, starting on the left for horizontal sliders and the top for vertical ones.

Keys-in-lock

n is 10. Turn the key clockwise when the last seconds digit of the bomb's timer equals the value.

White keypads

n is the factorial of the number of keys. Obtain the order in which to press the keys by applying the iterative process to the obtained value. In each iteration, the value of *n* for the nested process is the number of remaining keys, which are numbered from 0 in reading order.

Colored keypads

n is equal to *b* choose *k*, where *b* is the number of buttons and *k* is obtained from the table based on the keys' color.

Color	*k*
Red	2
Yellow	3
Blue	4

You will need to press *k* of the buttons. Write down all ways of choosing *k* out of *b* buttons (with the buttons in reading order) and sort them as if they were binary numbers (1 = press, 0 = no press). The value identifies the combination to press (numbered from 0).

"*b* choose *k*" = *b*! / (*k*! × (*b* − *k*)!).
! is the factorial function.

Knobs

n is the number of tickmarks. The states are numbered from 0 going clockwise. To find out which tickmark is state 0, start with the up-facing tickmark and move clockwise a number of tickmarks equal to the numeric value of the first character in the serial number (letters are A=1 to Z=26).

Buttons

n is *k* + *p*, where *k* is obtained from the table based on the button's color, while *p* is the number of corners of the button's shape.

Color	*k*
Red	2
Yellow	1
Blue	0
White	3

If the obtained value is < *k*, hold the button across that many timer ticks. Otherwise, subtract *k* − 2 from the value and tap the button that many times.

Then wait for two timer ticks for the input to be recognized.

A "timer tick" is a change in the seconds value of the bomb's countdown timer.

Digit displays

n is the number of prior items in the process excluding wires. The value identifies a prior item, numbered from 0 in the order of the process.

Set the display to the digit it showed in blue when that item was interacted with. Entered digits are shown in yellow.

Wires

n is 2. If the condition in the following table is <u>false</u>, 1 means "cut" and 0 means "don't cut"; if it is <u>true</u>, they are reversed.

Wire color	Condition
Black	more battery holders than port plates
Blue	more letters than digits in the serial number
Red	more parallel+serial ports than all other port types
Yellow	more lit than unlit indicators
White	more D batteries than AA batteries

LEDs

An LED starts out flashing between two colors. Look up that combination of colors in the following table to obtain a new list of colors. *n* is the size of that list. The value identifies a color from that list, numbered from 0.

Tap the LED once to switch to input mode. The LED will cycle all five possible colors. Tap the LED again when the correct color is shown to submit it.

R	Y	B	W	
K B Y R W	K Y W B R	K Y R W	B R W K	K
	Y W K B R	W B	B K Y	R
		R Y K B	Y W B K	Y
			R W	B

B = blue, K = black, R = red, W = white, Y = yellow

Switches

n is the number of positions the switch can be toggled to (between 2 and 4). These positions are numbered from 0 starting from the full "up" position.

Letter Displays
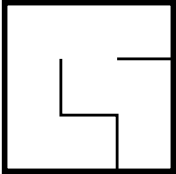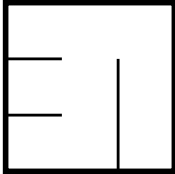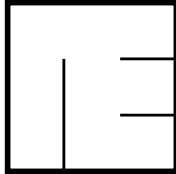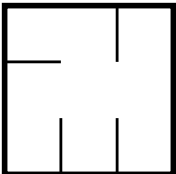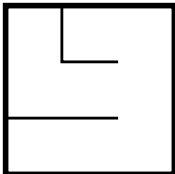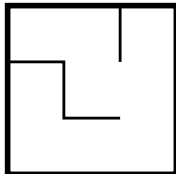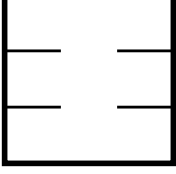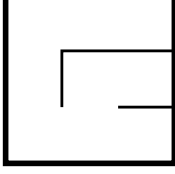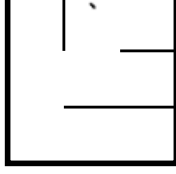
n is the number of words from the below word list that can be formed using the provided options. The words are numbered from 0 in alphabetical order.

```
ACE BIT DOG FRQ IND LUA NUT QUA SEE TIP
ACT BIZ DOT FRY INK LUG OIL QUE SET TOE
AID BOB DRY FUN IRK MAD OPT QUO SHE TOO
AIM BOW DUE FUR JAM MAN OUR RAG SHY TOP
AIR BOY DUG GET JAR MAP OUT RAM SIC TOY
ALE BUT DUO GIG JAW MAT OWE RAT SIG TRN
ALL BUY DYE GIN JOB MAX OWL RAW SIN TRY
AND BYE EAR GUM JOY MAY PAD RED SIR TUB
ANT CAN EAT GUT KID MIC PAN RGB SIT VAT
APT CAP FAN GUY KIN MID PAR RIB SIX VET
ARM CAR FAQ HAM KIT MIX PAT RID SLY WAR
ART CAT FAR HAT LAD MOB PAY RIG SND WAX
AWE COP FAT HAY LAP MOD PEG RIM SUE WAY
AYE COT FAX HEN LAW MUD PEN ROB SUM WEE
BAD COW FED HER LAY MUG PER ROD SUN WET
BAG CUE FEE HEY LEG MUM PET ROT TAG WHY
BAR CUP FEN HIM LET NET PIE ROW TAP WIG
BAT CUT FEW HIP LID NEW PIG RUB TAX WIN
BAY DAD FIN HIT LIE NIL PIN RUG TEA WIT
BED DAM FIT HOP LIP NLL PIT RUM TEE WIZ
BEE DAY FIX HOT LIT NOD POP RUN TEN WRY
BEG DIE FLY HOW LOG NOR POT SAD TGB YEN
BET DIG FOG HUT LOO NOT POW SAW THY YET
BID DIM FOR ILK LOT NOW PUB SAY TIE ZAG
BIG DIP FRK ILL LOW NUN PUT SEA TIN ZIG
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Braille displays

n is the number of distinct characters in the serial number. The value identifies the character to input in Braille. Digits are input as 1=A, ..., 9=I, 0=J, except shifted down one row.
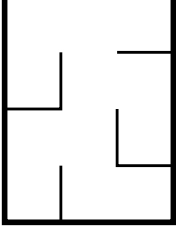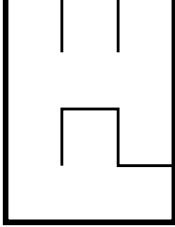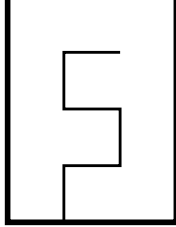
3×3 mazes

	Red	Yellow	Blue
✚			
★			
▲			
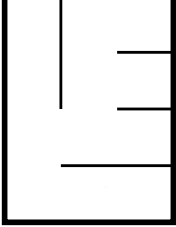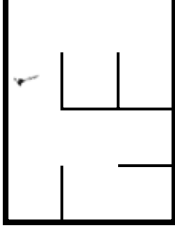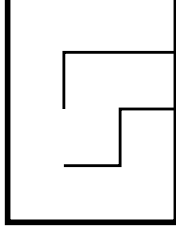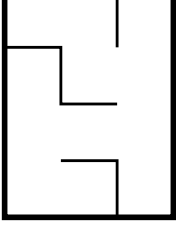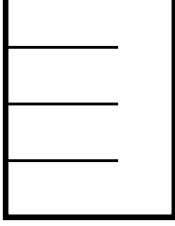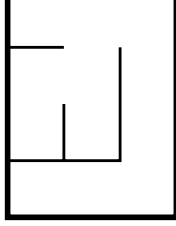
3×4 mazes

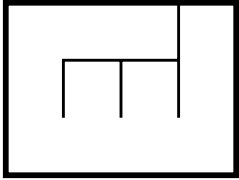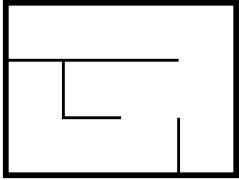|	Red	Yellow	Blue
✚			
★			
▲			

Mazes
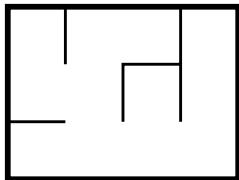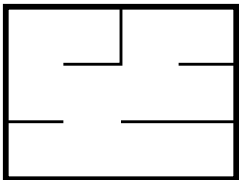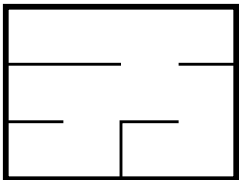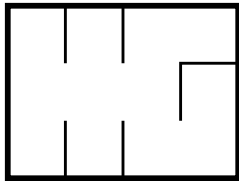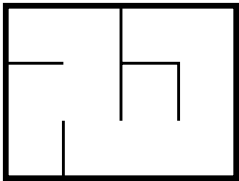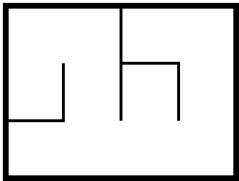
n is the number of positions in the maze (width times height).

Use the arrow buttons to move the symbol to the goal position identified by the value. The positions are numbered in reading order from 0 in the top-left corner.

4×3 mazes

	Red	Yellow	Blue
✚			
★			
▲			

4×4 mazes

	Red	Yellow	Blue
✚			
★			
▲			