KEEP TALKING and NOBODY EXPLODES

BOMB DEFUSAL MANUAL

Version 1

Verification Code: 241

*Welcome to the dangerous and challenging world of bomb defusing.*
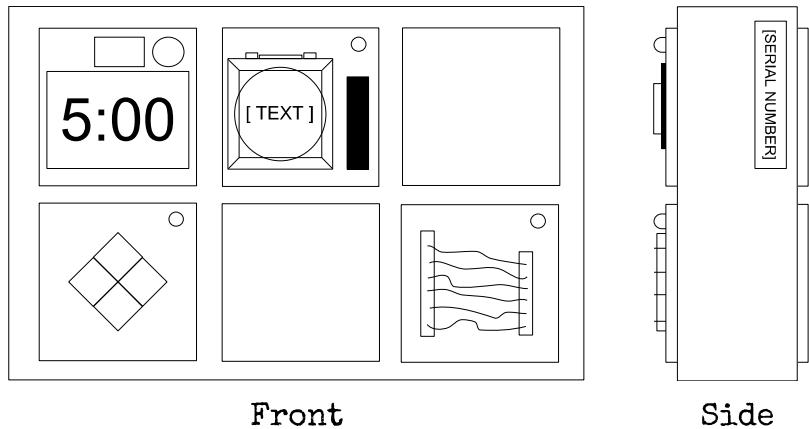
Study this manual carefully; <u>you are the expert</u>. In these pages you will find everything you need to know to defuse even the most insidious of bombs. And remember — One small oversight and it could all be over!

Defusing Bombs

A bomb will explode when its countdown timer reaches 0:00 or when too many strikes have been recorded. The only way to defuse a bomb is to disarm all of its modules before its countdown timer expires.

Example Bomb

Front   Side
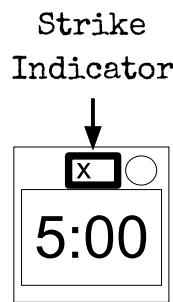
Modules

Each bomb will include up to 11 modules that must be disarmed. Each module is discrete and can be disarmed in any order.

Instructions for disarming modules can be found in Section 1. "Needy" modules present a special case and are described in Section 2.

Strikes

When the Defuser makes a mistake the bomb will record a strike which will be displayed on the indicator above the countdown timer. Bombs with a strike indicator will explode upon the third strike. The timer will begin to count down faster after a strike has been recorded.

Strike Indicator

If no strike indicator is present above the countdown timer, the bomb will explode upon the first strike, leaving no room for error.

Gathering Information
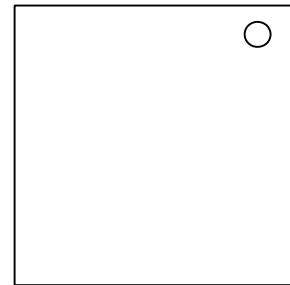
Some disarming instructions will require specific information about the bomb, such as the serial number. This type of information can typically be found on the top, bottom, or sides of the bomb casing. See Appendix A, B, and C for identification instructions that will be useful in disarming certain modules.

Section 1: Modules

Modules can be identified by an LED in the top right corner.
When this LED is lit green the module has been disarmed.
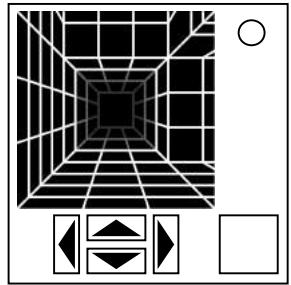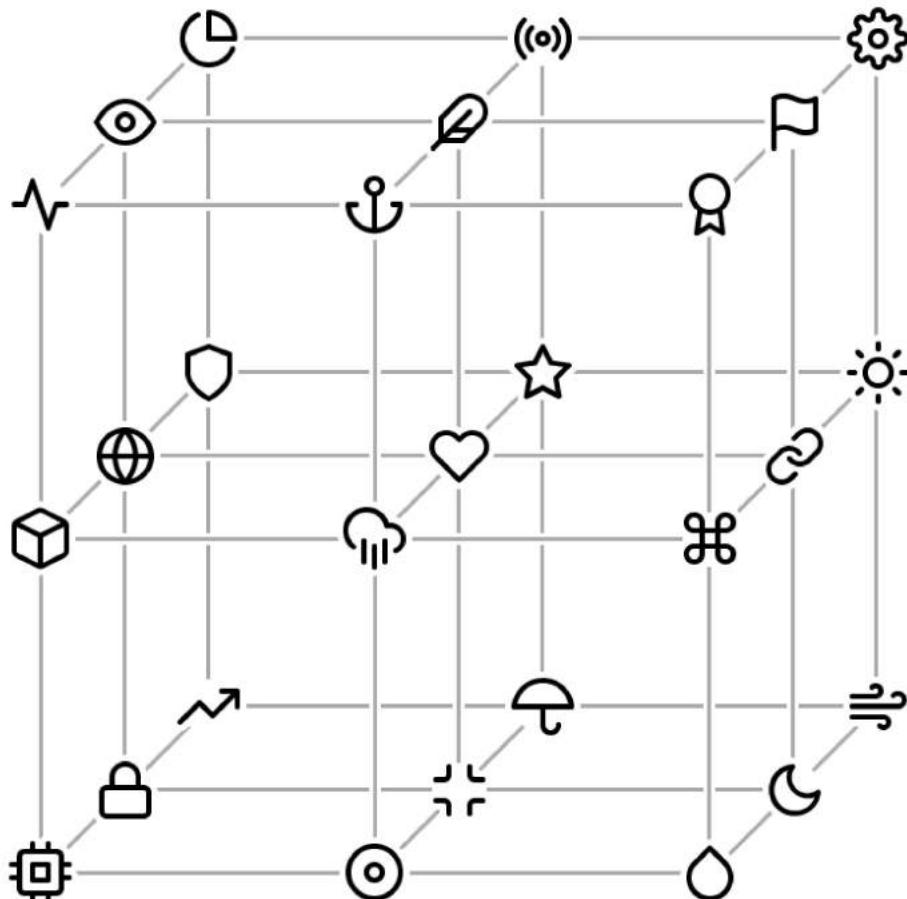
All modules must be disarmed to defuse the bomb.

On the Subject of 3D Tunnels

Let's take this to another dimension.
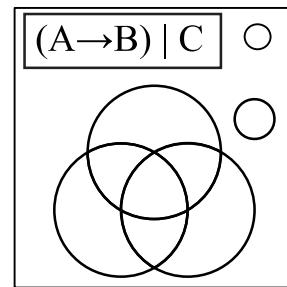
You control a hovercraft inside a grid of nodes connected by tunnels. Nodes are identified by a unique symbol. Use the four arrow buttons to travel through the grid. There's also a button with a symbol on it, representing your next goal node. Travel there and press the goal button. Repeat this three times to solve the module.

- Only a few nodes will show the symbol of that node. Locate some symbols to determine your current location and orientation.
- The arrow buttons *rotate* the hovercraft in that direction. The thrust button is broken and has been removed. (But no worries! I've fixed it!) **After every rotate** command, the hovercraft will go **one node forward.**
- If you fly into a wall, you'll get a strike.
- If you press the goal button while not at the goal node, you'll get a strike.

On the Subject of Boolean Venn Diagrams

*Why is there a big Venn diagram? Why are there some weird symbols? Oh no...*

- This module has eight buttons, one for each enclosed section of the Venn diagram and one representing the area not enclosed in any section of the diagram.
- The three circles are referred to as "A" (top), "B" (bottom left), and "C" (bottom right).
- For each section, use the boolean logic expression displayed above the Venn diagram to determine if that section is "true" or "false" by using the following rules:
  - If the section is enclosed in a circle, then the value for that variable is considered to be "true". Otherwise, it is "false".
    Example: The middle section is enclosed in all three circles, so "A", "B", and "C" should all be considered to be "true" while evaluating that section.
  - Evaluate the operator inside the parentheses before the one outside of the parentheses.
  - Images describing each operator can be found below (gray regions represent "true").
  - If the section evaluates to "true", press the button that corresponds with it. The section will turn green.
- Solve the module by pressing the buttons corresponding to all of the "true" sections.
- Note: if an incorrect button is pressed, a strike will be issued and the section will turn red.
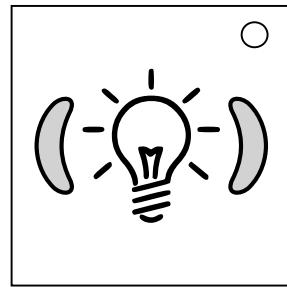
X ∧ Y AND	X ∨ Y OR	X ⊻ Y XOR	X → Y IMPLIES
X Y	X Y	X Y	X Y

X | Y NAND	X ↓ Y NOR	X ↔ Y XNOR	X ← Y IMPLIED BY
X Y	X Y	X Y	X Y

On the Subject of The Bulb

How many bomb defusal experts does it take to screw in a light bulb?

This module has two buttons labeled **I** and **O** and a light bulb, which is either see-through (translucent) or opaque, and is one of six colors: blue, green, purple, red, white or yellow.

If you incur a strike because you pushed a wrong button, ignore it and continue. If you incur a strike because you unscrewed or screwed in the bulb at an incorrect time, you <u>must</u> undo that before continuing.

Begin at <u>Step 1</u> below.

While the bulb is screwed in, a long press on either button will reset the module back to Step 1. Attempting this while the bulb is out will incur a strike.

Step 1
- If the light is on and the bulb is see-through, press **I** and go to **Step 2.**
- If the light is on and the bulb is opaque, press **O** and go to **Step 3.**
- Otherwise, unscrew the bulb and go to **Step 4.**

Step 2
- If the bulb is red, press **I**, then unscrew it and go to **Step 5.**
- If the bulb is white, press **O**, then unscrew it and go to **Step 6.**
- Otherwise, unscrew the bulb and go to **Step 7.**

Step 3
- If the bulb is green, press **I**, then unscrew it and go to **Step 6.**
- If the bulb is purple, press **O**, then unscrew it and go to **Step 5.**
- Otherwise, unscrew the bulb and go to **Step 8.**

Step 4
- If the bomb has any of the following indicators: CAR, IND, MSA or SND, press **I** and go to **Step 9.**
- Otherwise, press **O** and go to **Step 10.**

Step 5
- If the light went off at Step 1, press the same button again, then screw the bulb back in.
- Otherwise, press the button you haven't yet pressed, then screw the bulb back in.

Step 6
- If the bulb went off when you pressed **I**, press the button that you pressed in Step 1, then screw the bulb back in.
- Otherwise, press the button that you pressed in Step 2 or 3, then screw the bulb back in.
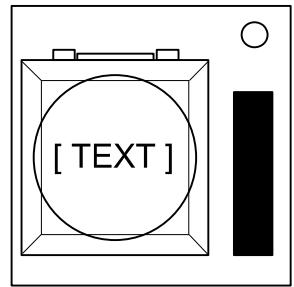
Step 7
- If the bulb is green, press **I**, remember <u>SIG</u> and go to **Step 11**.
- If the bulb is purple, press **I**, then screw it back in and go to **Step 12**.
- If the bulb is blue, press **O**, remember <u>CLR</u> and go to **Step 11**.
- Otherwise, press **O**, then screw the bulb back in and go to **Step 13**.

Step 8
- If the bulb is white, press **I**, remember <u>FRQ</u> and go to **Step 11**.
- If the bulb is red, press **I**, then screw it back in and go to **Step 13**.
- If the bulb is yellow, press **O**, remember <u>FRK</u> and go to **Step 11**.
- Otherwise, press **O**, then screw the bulb back in and go to **Step 12**.

Step 9
- If the bulb is blue, press **I** and go to **Step 14**.
- If the bulb is green, press **I**, then screw it back in and go to **Step 12**.
- If the bulb is yellow, press **O** and go to **Step 15**.
- If the bulb is white, press **O**, then screw it back in and go to **Step 13**.
- If the bulb is purple, screw it back in, then press **I** and go to **Step 12**.
- Otherwise, screw the bulb back in, then press **O** and go to **Step 13**.

Step 10
- If the bulb is purple, press **I** and go to **Step 14**.
- If the bulb is red, press **I**, then screw it back in and go to **Step 13**.
- If the bulb is blue, press **O** and go to **Step 15**.
- If the bulb is yellow, press **O**, then screw it back in and go to **Step 12**.
- If the bulb is green, screw it back in, then press **I** and go to **Step 13**.
- Otherwise, screw the bulb back in, then press **O** and go to **Step 12**.

Step 11
- If the bomb has the remembered indicator, press **I**, then screw the bulb back in.
- Otherwise, press **O**, then screw the bulb back in.

Step 12
- If the light is now on, press **I**.
- Otherwise, press **O**.

Step 13
- If the light is now on, press **O**.
- Otherwise, press **I**.

Step 14
- If the bulb is opaque, press **I**, then screw the bulb back in.
- Otherwise, press **O**, then screw the bulb back in.

Step 15
- If the bulb is see-through, press **I**, then screw the bulb back in.
- Otherwise, press **O**, then screw the bulb back in.

On the Subject of The Button

You might think that a button telling you to press it is pretty straightforward. That's the kind of thinking that gets people exploded.

See Appendix A for indicator identification reference.
See Appendix B for battery identification reference.

Follow these rules in the order they are listed. Perform the first action that applies:

1. If the button is blue and the button says "Abort", hold the button and refer to "Releasing a Held Button".
2. If there is more than 1 battery on the bomb and the button says "Detonate", press and immediately release the button.
3. If the button is white and there is a lit indicator with label CAR, hold the button and refer to "Releasing a Held Button".
4. If there are more than 2 batteries on the bomb and there is a lit indicator with label FRK, press and immediately release the button.
5. If the button is yellow, hold the button and refer to "Releasing a Held Button".
6. If the button is red and the button says "Hold", press and immediately release the button.
7. If none of the above apply, hold the button and refer to "Releasing a Held Button".

Releasing a Held Button
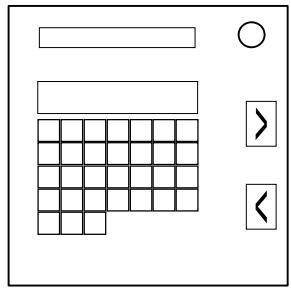
If you start holding the button down, a colored strip will light up on the right side of the module. Based on its color you must release the button at a specific point in time:

- <u>Blue strip:</u> release when the countdown timer has a 4 in any position.
- <u>White strip:</u> release when the countdown timer has a 1 in any position.
- <u>Yellow strip:</u> release when the countdown timer has a 5 in any position.
- <u>Any other color strip:</u> release when the countdown timer has a 1 in any position.

On the Subject of Calendars

It's beginning to look a lot like Christmas... or is it Kwanzaa...? Day of the Dead?

- In this module, you have a somewhat broken calendar with months you can scroll through using the arrows to the left and right of the calendar.
- There will also be a skinny colored LED indicator at the top of the module that will be either red, green, blue, or yellow.
- As you scroll through the calendar, you will notice either a single day circled with a red circle or a group of days bracketed off with red brackets.
- Using your current local date*, the information on the module, and edgework, you must find the specific day in the specific month to then click in order to solve the module. Any clicks on an improper day will cause you to receive a strike.

Step 1:

First, use the LED color and your current local date* to find out which month your answer is in. *Season boundaries are inclusive.*

- *Spring: March 22nd – June 21st*
- *Summer: June 22nd – September 21st*
- *Autumn: September 22nd – December 21st*
- *Winter: December 22nd – March 21st*

Your Current Season		Spring			Summer			Autumn			Winter		
Your Current Date*		1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-31
L E D C O L O R	**Green**	Jan	Nov	Aug	Jun	Mar	Dec	Feb	Jul	Sep	May	Oct	Apr
	Yellow	Dec	Jun	Apr	Oct	May	Feb	Aug	Nov	Mar	Jul	Jan	Sep
	Red	Feb	Jul	Oct	Jan	Sep	Aug	Dec	Apr	Jul	Mar	Nov	Jun
	Blue	May	Mar	Sep	Apr	Jul	Nov	Jun	Oct	Jan	Dec	Aug	Feb

*Current local date refers to the date that the bomb was activated on.

Step 2:

Next, use the rightmost*** number of the serial number and the holiday selected in red on the module to figure which day of your previously selected month is the answer. The red mark indicates a holiday somewhere in the world; if you are unsure of the holiday marked off, refer to the Appendix of Holidays on the next page. Some of the answers this table contain are formatted as such: #/#. If this is the case, use the first number if your selected month has that many days. Otherwise, use the second number.

| Holiday**	Rightmost*** Number of the Serial #									
	0	1	2	3	4	5	6	7	8	9
Christmas Eve	12	2	11	7	18	24	4	14	10	20
Day of the Dead	4	16	21	15	27	6	25	13	2	9
Bastille Day	22	14	6	11	8	19	31/7	23	28	26
Golden Week	8	20	17	16	23	16	1	22	24	5
Australia Day	19	5	24	3	29/1	28	18	30/4	13	12
Republic Day	10	29/2	12	24	15	20	5	27	25	7
Epiphany	15	1	31/7	17	26	30/8	24	9	3	25
Earth Day	23	13	25	30/3	4	11	27	15	21	31/5
Day of German Unity	4	27	8	22	10	14	13	28	13	21
Cinco de Mayo	29/3	19	27	15	9	16	19	14	9	3
Veterans Day	14	7	23	17	5	31/1	2	25	17	11
Guy Fawkes Night	26	16	3	26	29/7	18	22	25	17	11
Saint Patrick's Day	2	28	18	13	21	12	3	10	20	1
World Braille Day	17	24	15	20	1	30/9	28	6	7	14
Kwanzaa	21	9	30/6	24	28	6	21	26	31/2	8
Valentine's	11	6	22	14	19	27	20	7	16	23
April Fools'***	1	2	3	4	5	6	7	8	9	10

**If the holiday is Groundhog Day, click any day in the correct month 3 times. You will get two fake strike sounds, but then the module will be solved.

***If the holiday is April Fools', use the leftmost number of the serial number in the table in step 2 instead of the rightmost.

On the Subject of The Code

What kind of Code? It could be a letter code! It could be a digit code! Heck, it could even be a alphanumerical Code! fffffffffffffffffffffffffffffffffffffffffffff.

- To defuse this module, you need to input the correct four digit code.
- To do that, take the displayed number at the top and follow the rules below.

Determining the code.

If there is exactly 1 battery in 1 holder, an unlit BOB and a serial port, submit the displayed number.

Otherwise, if there is an even number of ports, divide the displayed number by 23.

Otherwise, if the bomb was started on a Sunday or Saturday, divide the displayed number by 8.

Otherwise, if there is an even number of modules on the bomb, divide the displayed number by 20.

Otherwise, if there is a Burglar Alarm module on the bomb, divide the displayed number by 30.

Otherwise, if the last digit of the serial number is odd, divide the displayed number by 42.

Otherwise, if there is exactly 3 lit indicators, divide the displayed number by 69.
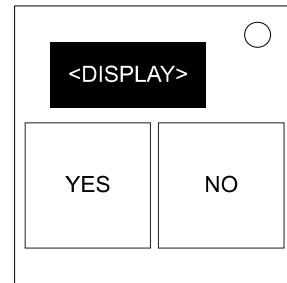
Otherwise, divide the displayed number by 12.

- Remove all of the decimals and submit the answer.

On the Subject of Color Flash

It's easy to identify colors. Red, Blue, Green, etc. Turns out it's a bit harder when you display a word color in a different color though...

<DISPLAY>

YES   NO

- A color flash module will repeatedly flash a sequence of 8 different words representing colors in different colors.
- The possible colors are Red, Yellow, Green, Blue, Magenta and White.
- There is also a Yes button and a No button on the module.
- Only <u>one</u> of the Yes and No buttons need to be pressed to disarm the module, but must be pressed at the correct time according to the rules below.
- The color of the last word in the sequence determines which set of rules to follow below.
- Follow the rules down from the top-most rule, down to the bottom-most rule for the block that applies to your module.

<u>The color of the last word in the sequence is Red:</u>

If Green is used as the word at least three times in the sequence, press Yes on the third time Green is used as either the word or the color of the word in the sequence.

Otherwise, if Blue is used as the color of the word exactly once, press No when the word Magenta is shown.

Otherwise, press Yes the last time White is either the word or the color of the word in the sequence.

<u>The color of the last word in the sequence is Yellow:</u>

If the word Blue is shown in Green color, press Yes on the first time Green is used as the color of the word.

Otherwise, if the word White is shown in either White or Red color, press Yes on the second time in the sequence where the color of the word does not match the word itself.

Otherwise, count the number of times Magenta is used as either the word or the color of the word in the sequence (the word Magenta in Magenta color only counts as one), and press No on the color in the total's position (e.g. a total of 4 means the fourth color in sequence).

Continuation of previous table...

The color of the last word in the sequence is Green:

If a word occurs consecutively with different colors, press No on the fifth entry in the sequence.

If Magenta is used as the word as least three times in the sequence, press No on the first time Yellow is used as either the word or the color of the word in the sequence.

Otherwise, press Yes on any color where the color of the word matches the word itself.

The color of the last word in the sequence is Blue:

If the color of the word does not match the word itself three times or more in the sequence, press Yes on the first time in the sequence where the color of the word does not match the word itself.

If the word Red is shown in Yellow color, or the word Yellow is shown in White color, press No when the word White is shown in Red color.

Otherwise, press Yes the last time Green is either the word or the color of the word in the sequence.

The color of the last word in the sequence is Magenta:

If a color occurs consecutively with different words, press Yes on the third entry in the sequence.

If the number of times the word Yellow appears is greater than the number of times that the color of the word is Blue, press No the last time the word Yellow is in the sequence.

Otherwise, press No on the first time in the sequence where the color of the word matches the word of the seventh entry in the sequence.

The color of the last word in the sequence is White:

If the color of the third word matches the word of the fourth word or fifth word, press No the first time that Blue is used as the word or the color of the word in the sequence.
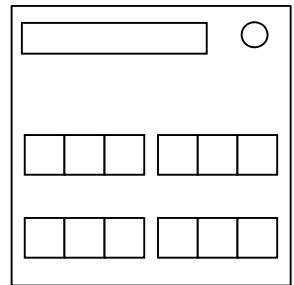
If the word Yellow is shown in Red color, press Yes on the last time Blue is used as the color of the word.

Otherwise, press No.

On the Subject of Connection Check
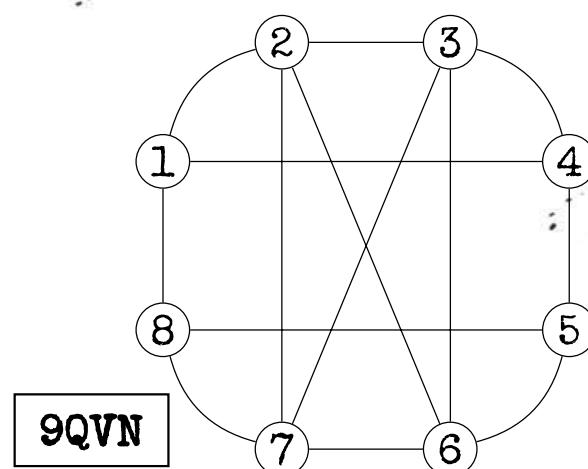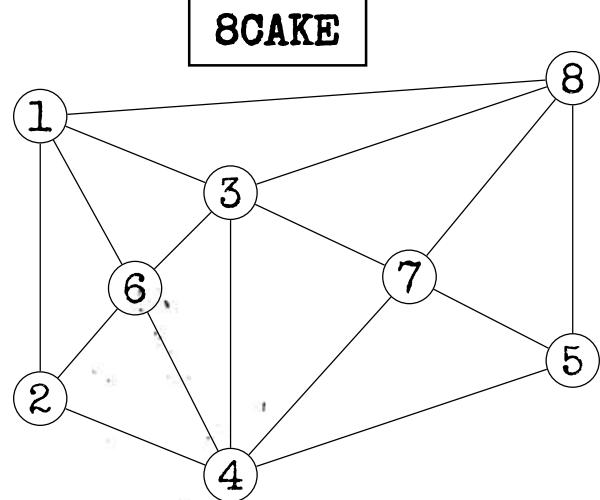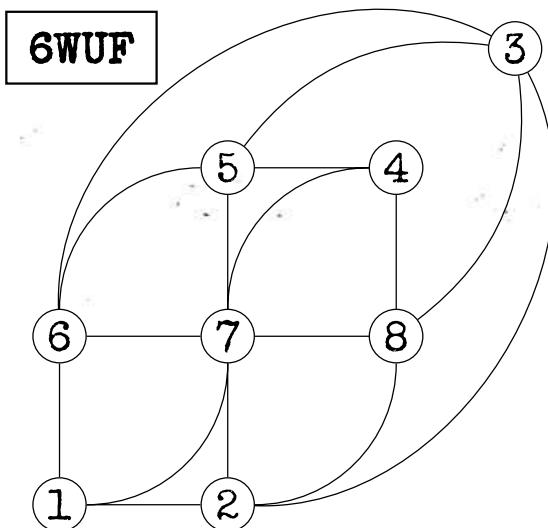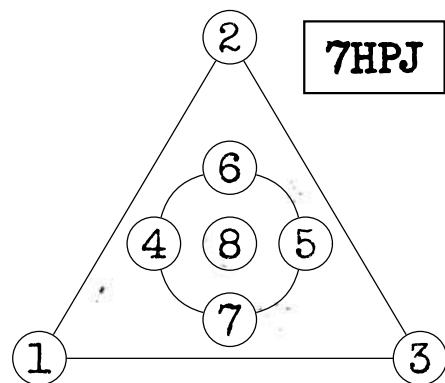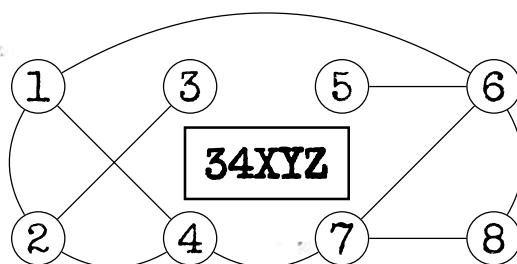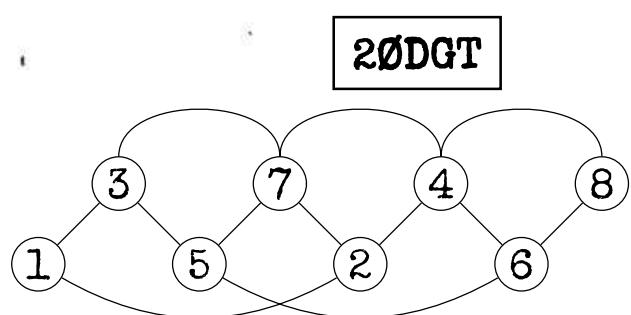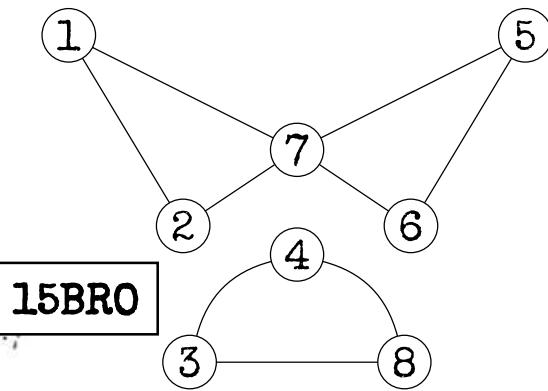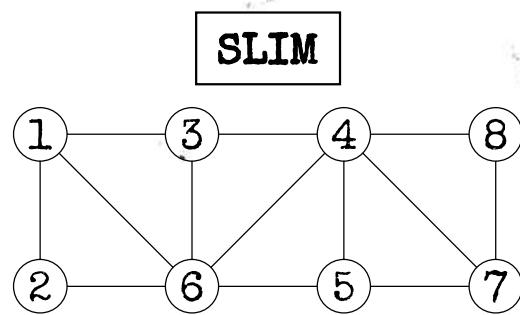
What is this, some kind of circuit visualization? I don't even care anymore...

- This module contains 4 number pairs placed on each side of 4 LEDs and a "Check" button.
- To disarm this module, you must follow these steps:

  1. Find out in which chart you will be looking for connections, using the rules given below.
  2. For each LED look at the numbers on each side of it and check if there is a line connecting the circles denoted with those numbers in the right chart.
  3. If there is such a connection, switch the LED to GREEN, otherwise switch it to RED.
  4. Press the "CHECK" button. If LED positions are correct, the module will disarm. Otherwise the bomb will register a strike.

To determine the right chart on the next page you will need a character of the bomb's serial number. Use the following rules to find out which character you need. Then, on the next page, search for that character in the codes that label the charts. The chart with a code containing your character is the chart you are looking for.
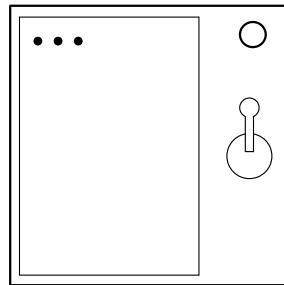
If all of the numbers on this module are **distinct,** use the **last** character of the serial number.

Otherwise, if there is **more than one "1"** on the module, look at the **first** character of the serial number.

Otherwise, if there is **more than one "7"** on the module, look at the **last** character of the serial number.

Otherwise, if there are **at least three "2"** on the module, look at the **second** character of the serial number.

Otherwise, if there is **no "5"** on the module, look at the **fifth** character of the serial number.

Otherwise, if there are **exactly two "8"s** on the module, look at the **third** character of the serial number.

Otherwise, if there are **more than 6 batteries** or **no batteries** on the bomb, look at the **last** character of the serial number.

Otherwise, **count the number of batteries** on the bomb. Use that number to decide which character of the serial number you should look at. E.g.: if there are 3 batteries, look at the third character of the serial number.

SLIM

15BRO

20DGT

34XYZ

7HPJ

6WUF

8CAKE

9QVN

On the Subject of Crazy Talk

Nothing. Literally nothing. Blank. Nada.

1. Text will appear on a display.
2. Find the exact match and the action in the table below.
3. Flip the switch <u>down</u> when the bomb timer has the number before the forward slash in the seconds column.
4. Flip the switch back <u>up</u> when the bomb timer has the number after the forward slash in the seconds column.
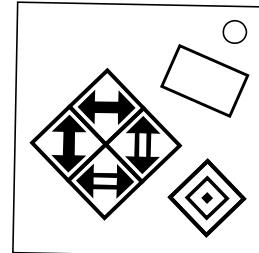
Display	Action	Display	Action
← ← → ← → →	5/4	NO REALLY.	5/2
1 3 2 4	3/2	← LEFT → LEFT → RIGHT	5/6
LEFT ARROW LEFT WORD RIGHT ARROW LEFT WORD RIGHT ARROW RIGHT WORD	5/8	ONE AND THEN 3 TO 4	4/7
		STOP TWICE	7/6
BLANK	1/3	LEFT	6/9
LITERALLY BLANK	1/5	..	8/5
FOR THE LOVE OF ALL THAT IS GOOD AND HOLY PLEASE FULLSTOP FULLSTOP.	9/0	PERIOD PERIOD	8/2
AN ACTUAL LEFT ARROW LITERAL PHRASE	5/3	THERE ARE THREE WORDS NO PUNCTUATION READY? STOP DOT PERIOD	5/0
FOR THE LOVE OF – THE DISPLAY JUST CHANGED, I DIDN'T KNOW THIS MOD COULD DO THAT. DOES IT MENTION THAT IN THE MANUAL?	8/7	NOVEBMER OSCAR SPACE, LIMA INDIGO TANGO ECHO ROMEO ALPHA LIMA LIMA YANKEE SPACE NOVEMBER OSCAR TANGO HOTEL INDEGO NOVEMBER GOLF	2/9
ALL WORDS ONE THREE TO FOR FOR AS IN THIS IS FOR YOU	4/0	FIVE WORDS THREE WORDS THE PUNCTUATION FULLSTOP	1/9
LITERALLY NOTHING	1/4	THE PHRASE: THE PUNCTUATION FULLSTOP	9/3
NO, LITERALLY NOTHING	2/5	EMPTY SPACE	1/6
THE WORD LEFT	7/0	ONE THREE TWO FOUR	3/7
HOLD ON IT'S BLANK	1/9	IT'S SHOWING NOTHING	2/3
SEVEN WORDS FIVE WORDS THREE WORDS THE PUNCTUATION FULLSTOP	0/5	LIMA ECHO FOXTROT TANGO SPACE ALPHA ROMEO ROMEO OSCAR RISKY SPACE SIERRA YANKEE MIKE BRAVO OSCAR LIMA	1/2
THE PHRASE THE WORD STOP TWICE	9/1	ONE 3 2 4	3/4
THE FOLLOWING SENTENCE THE WORD NOTHING	2/7	STOP.	7/4
ONE THREE TO FOR	3/9	.PERIOD	8/1
THREE WORDS THE WORD STOP	7/3	NO REALLY STOP	5/1
DISREGARD WHAT I JUST SAID. FOUR WORDS, NO PUNCTUATION. ONE THREE 2 4.	3/1	1 3 TOO 4	2/0
1 3 2 FOR	1/0	PERIOD TWICE	8/3
DISREGARD WHAT I JUST SAID. TWO WORDS THEN TWO DIGITS. ONE THREE 2 4.	0/8		
WE JUST BLEW UP	4/2		

Display	Action	Display	Action
1 3 TOO WITH 2 OHS FOUR	4/2	THIS ONE IS ALL ARROW SYMBOLS NO WORDS	2/8
1 3 TO 4	3/0	←	6/3
STOP DOT PERIOD	5/0	THE WORD STOP TWICE	9/4
LEFT LEFT RIGHT LEFT RIGHT RIGHT	6/7	← ← RIGHT LEFT → →	6/1
IT LITERALLY SAYS THE WORD ONE AND THEN THE NUMBERS 2 3 4	4/5	THE PUNCTUATION FULLSTOP	9/2
ONE IN LETTERS 3 2 4 IN NUMBERS	3/5	1 3 TOO WITH TWO OS 4	4/1
WAIT FORGET EVERYTHING I JUST SAID, TWO WORDS THEN TWO SYMBOLS THEN TWO WORDS: ← ← RIGHT LEFT → →	1/6	THREE WORDS THE PUNCTUATION FULLSTOP	9/9
1 THREE TWO FOUR	3/6	OK WORD FOR WORD LEFT ARROW SYMBOL TWICE THEN THE WORDS RIGHT LEFT RIGHT THEN A RIGHT ARROW SYMBOL	6/0
PERIOD	7/9		
.STOP	7/8	DOT DOT	8/6
NOVEBMER OSCAR SPACE, LIMA INDIA TANGO ECHO ROMEO ALPHA LIMA LIMA YANKEE SPACE NOVEMBER OSCAR TANGO HOTEL INDIA NOVEMBER GOLF	0/7	LEFT ARROW	6/8
		AFTER I SAY BEEP FIND THIS PHRASE WORD FOR WORD BEEP AN ACTUAL LEFT ARROW	7/2
LIMA ECHO FOXTROT TANGO SPACE ALPHA ROMEO ROMEO OSCAR WHISKEY SPACE SIERRA YANKEE MIKE BRAVO OSCAR LIMA	6/5	ONE THREE 2 WITH TWO OHS 4	4/3
		LEFT ARROW SYMBOL	6/4
NOTHING	1/2	AN ACTUAL LEFT ARROW	6/2
THERE'S NOTHING	1/8	THAT'S WHAT IT'S SHOWING	2/1
STOP STOP	7/5	THE PHRASE THE WORD NOTHING	2/6
RIGHT ALL IN WORDS STARTING NOW ONE TWO THREE FOUR	4/9	THE WORD ONE AND THEN THE NUMBERS 3 2 4	4/8
THE PHRASE THE WORD LEFT	7/1	ONE 3 2 FOUR	3/8
LEFT ARROW SYMBOL TWICE THEN THE WORDS RIGHT LEFT RIGHT THEN A RIGHT ARROW SYMBOL	5/9	ONE WORD THEN PUNCTUATION. STOP STOP.	0/9
		THE WORD BLANK	0/1
LEFT LEFT RIGHT ← RIGHT →	5/7	FULLSTOP FULLSTOP	8/4
NO COMMA LITERALLY NOTHING	2/4		
HOLD ON CRAZY TALK WHILE I DO THIS NEEDY	2/1		

On the Subject of Double-Oh

A module, please. Shaken, not stirred. Stupid piece of junk; broken display, broken buttons...

- A display is shown with a two digit number, as well as five buttons. Using the buttons, toggle the display to 00 (located in the center of the below table), then hit the submit button.
- Four of the five buttons toggle the number in the display. Based on the table below, consisting of a 3×3 grid of smaller 3×3 grids, the buttons will behave in the following fashion:
- The "↕" button moves to the next position up or down within the current smaller grid, looping if reaching the edge (example: 00 to 85 to 14 to 00)
- The "↔" button moves to the next position left or right within the current smaller grid, looping if reaching the edge (example: 00 to 56 to 21 to 00)
- The "⇕" button moves to the same position in the next large 3x3 grid up or down, looping if reaching the edge (example: 00 to 22 to 58 to 00)
- The "⇔" button moves to the same position in the next large 3x3 grid left or right, looping if reaching the edge (example: 00 to 44 to 65 to 00)
- The "▣" button is the submit button. Pressing it will disarm the module if 00 is displayed and cause a strike otherwise.

NOTE: This module is old, and the last digit glitches out when the first digit is zero. In addition, the wiring for the buttons is acting up, so the functions of the buttons may be swapped. Fortunately, the strikes from the submit button are only registered by the bomb if the displayed number is less than 10.

60	02	15	57	36	83	48	71	24
88	46	31	70	22	64	07	55	13
74	27	53	05	41	18	86	30	62
52	10	04	43	85	37	61	28	76
33	65	78	21	00	56	12	44	87
47	81	26	68	14	72	50	03	35
06	38	42	84	63	20	75	17	51
25	73	67	16	58	01	34	82	40
11	54	80	32	77	45	23	66	08
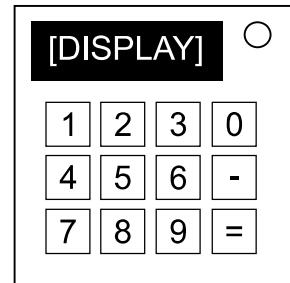
On the Subject of Emoji Math

Math is easy. But is it easy when the numbers are in another language? Let's find out.

Decipher the characters on the display into numbers and solve the answer to the question. Enter the answer with the keypad and press '=' to submit it. Use '−' to toggle the negative sign for negative answers. There's no delete button so press those buttons carefully!

For example: =(+=(translates to 1+1
The answer to enter is 2.

Character	Number
:)	0
=(	1
(:	2
)=	3
:(	4
):	5
=)	6
(=	7
:|	8
|:	9

[DISPLAY] ○

1	2	3	0
4	5	6	-
7	8	9	=

On the Subject of English Tests

You've lived all your life writing however you wanted without giving a second thought to who would be reading what you misspelled. But now, your life depends on your grammar and orthography, and this bomb is <u>very</u> nitpicky. You should of paid more attention in you're English class.

...Oh, carp.

See Appendix: Grammar for more information.

Question 1/3   ◯
We need to *diffuse* this bomb quickly.
[diffuse] defuse
◀   SUBMIT   ▶

- An English sentence with one *italic* word or phrase will be displayed on the large LCD display.
- Your goal is to select the correct word that fills in the blank.
- If multiple words appear to complete the sentence correctly, remember that this module is a pedantic prescriptivist!
- There are three rounds. Correctly complete all the sentences to disarm the module.
- If a mistake is made during the course of the test, the question number will reset to 1.

On the Subject of Keypads

I'm not sure what these symbols are, but I suspect they have something to do with occult.

- Only one column below has all four of the symbols from the keypad.
- Press the four buttons in the order their symbols appear from top to bottom within that column.
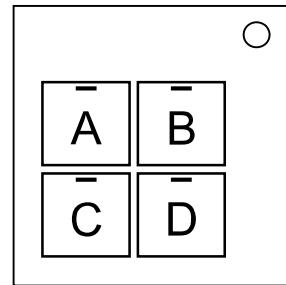
On the Subject of Alphabet

Can you speak English? Do you know the alphabet? Then you should be okay.

1. Use the four lettered buttons to spell a word from the word bank below.
2. Spell the longest word with the letters given by pressing the lettered buttons.
3. A letter can only be used once to spell a word.
4. If multiple words can be spelled, spell the word that comes first in alphabetical order, then the next one if there are enough remaining letters.
5. If no more words can be spelled, press the remaining buttons in alphabetical order.

Word Bank:

JQXZ	QEW	AC	ZNY	TJL
OKBV	DFW	YKQ	LXE	GS
VSI	PQJS	VCN	JR	IRNM
OP	QYDX	HDU	PKD	ARGF
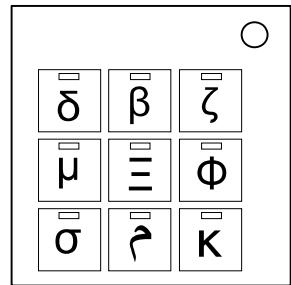
On the Subject of Complex Keypads

As if having four buttons wasn't enough.

See Appendix A for indicator identification reference.
See Appendix B for battery identification reference.
*See Appendix C for port identification reference.*

- Only one row below has all nine of the symbols that appear on the keypad.
- Follow these rules in the order they are listed. Perform the first action that applies:

  1. If there are more than 2 batteries and a parallel port present on the bomb, disregard the chart and press the keys as they appear on the module, going left to right, top to bottom.
  2. Otherwise, if a DVI-D port and a lit indicator labeled BOB are present on the bomb, the keys must be pressed in the order they appear in the chart going right to left.
  3. If none of the above apply, the keys must be pressed in the order they appear in the chart going left to right.

α	ε	θ	ψ	μ	Ξ	ζ	σ	β	Δ

π	α	ζ	ω	δ	Γ	η	ء	⊐	κ

φ	κ	ω	Γ	θ	β	ε	π	⊐	Δ

⊐	ء	φ	ε	μ	ω	α	σ	κ	ن

Γ	ω	μ	δ	ن	⊐	Ξ	α	η	β
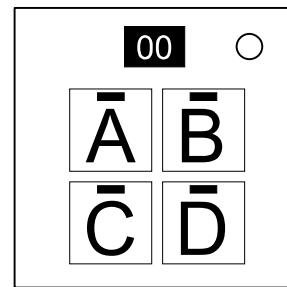
On the Subject of Letter Keys

I haven't thought of anything yet...

See Appendix A for indicator identification reference.
See Appendix B for battery identification reference.

Follow these rules in the order they are listed. Perform the first action that applies:

1. If the number indicated is equal to sixty-nine, Press the button with the label 'D'
2. If the number indicated is divisible by six, press the button with the label 'A'
3. If there are two or more batteries on the bomb and the number is divisible by three, press the button with the label 'B'
4. If the Serial number contains a 'C' 'E' or '3' and the number is greater than or equal to twenty-two, and less than or equal to seventy-nine, then press the button labelled 'B'
5. Otherwise, if the serial number contains a 'C' 'E' or '3', then press the button labelled 'C'
6. If the indicated number is less than forty-six, then press the button labelled 'D'
7. Otherwise, press the button labelled 'A'
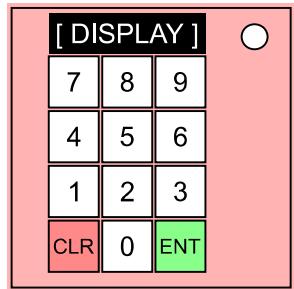
On the Subject of Number Pads

Try putting in 0000. No? Try 0001. Still not working? We might be here for a while...
*See Appendix A for indicator identification reference.*
See Appendix B for battery identification reference.
See Appendix C for port identification reference.

- Enter a 4-digit code using the numbered buttons.
- Press the green button labelled ENT to submit the entered code.
- Press the red button labelled CLR to discard the entered code.
- Perform the first action that applies on each level.
- The CLR and ENT buttons' colors are to be <u>ignored</u>.

Using the wheel chart, starting from the center, pick a path by following the instructions below for each level you are on. (center level is 1, next one out is 2, etc.) Each path you take is the code digit corresponding to its level number unless contradicted by higher levels' instructions. Follow the final instructions after you complete all four levels.
On the first level, the paths are in order from the upper-right corner going clockwise. On the rest of the levels, they are also in clockwise order.

Level 1:
If three or more of the numbered buttons are colored yellow, take the first path.
If the all three of the numbered buttons 4, 5, and 6 are colored white, blue, or red, take the second path.
If the serial number contains a vowel, take the third path.
Otherwise, take the fourth path.

Level 2:
If there are at least two blue numbered buttons and at least three green buttons, take the first path.
If the numbered button 5 isn't blue nor white, take the second path.
If there are less than two ports on the bomb, take the third path.
Otherwise, take the fourth path, and if the top row of buttons contains a green button, subtract 1 from the first digit (if it's 0, it becomes 9).

Level 3:
If there are more than two white numbered buttons and more than two yellow numbered buttons, take the first path.
Otherwise, take the second path and <u>reverse the current 3-digit code</u>.

Level 4:
If there are 2 or less yellow numbered buttons, take the first path and add 1 to each digit (if a digit is 9, it becomes 0).
Otherwise, take the second path.
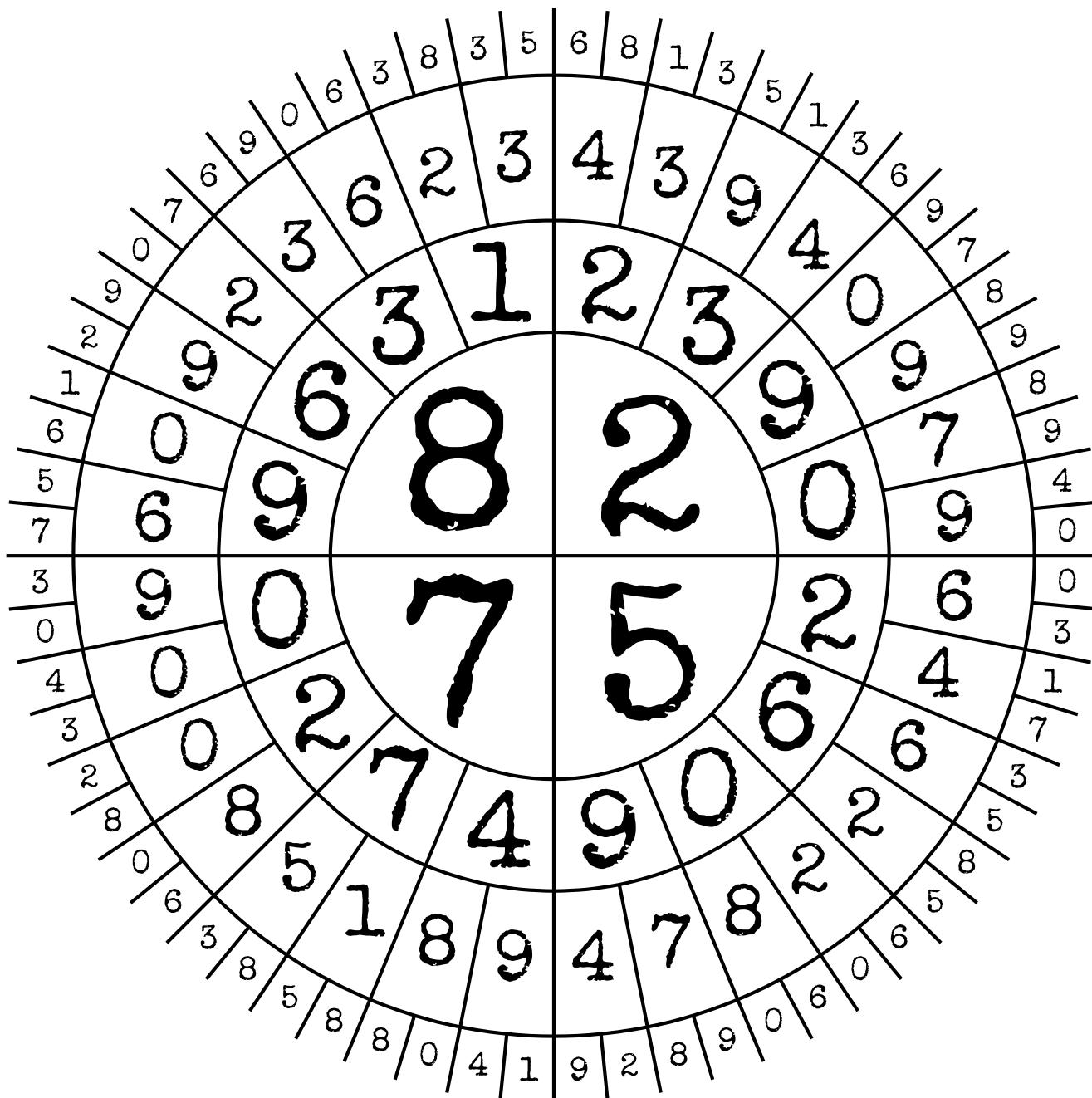
Final Instructions:

*(follow all instructions in this order)*

If the last digit of the serial number is even, swap the first and third digits.

If there are an odd number of batteries, swap the second and third digits.
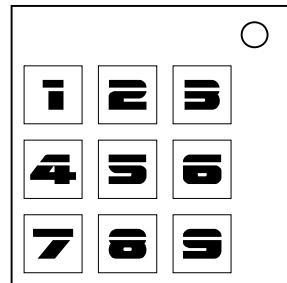
If both criteria above are not met, swap the first and fourth digits.

Finally, if the sum of all the digits in the code is <u>even</u>, reverse the code.

Wheel Chart

On the Subject of Lasers

Don't shoot yourself in the foot.

- The module will initially show 9 closed hatches in a 3×3 grid. Each hatch is numbered a digit from 1-9.
- Open 7 hatches to reveal 7 colored lasers in the order listed in the below table. At each stage, choose a laser that is not forbidden based on the rule listed in the table.
- Choosing a forbidden laser will earn a strike and reset the module to its initial state.
- You cannot re-use an already opened hatch. The numbers on the hatches do not change position. Make it through all 7 stages to defuse the module.
- Based on the hatches chosen in earlier stages, it is possible to reach a later stage in which no remaining hatches are valid. However, there is always at least one path that can be taken from start to finish that will not lead to such a situation.

Stage Color	Forbidden Lasers
Red	Any laser in the row containing the laser equal to the digital root* of the sum of all laser numbers in the topmost row.
Orange	Any laser orthogonally** adjacent to the laser taken in the red stage.
Yellow	Any laser in the column originally containing the laser equal to the digital root* of the sum of all laser numbers originally in the 2 rightmost columns.
Green	Any laser NOT diagonally adjacent to the laser taken in the yellow stage.
Blue	Any laser in the row or the column originally containing the laser equal to the digital root* of the (number of whole minutes originally in the bomb plus one).
Purple	Any laser that shares parity (that is, matches even/odd condition) with the number of modules originally on the bomb.
White	Any laser originally adjacent to the laser taken in the blue stage.

* Digital root is calculated by adding the sum of the digits of a number, and repeating until left with a single number. For example, 1356 = 1+3+5+6 = 15; 15 = 1+5 = 6, so the digital root of 1356 is 6.

** Lasers are orthogonally adjacent if they are to the left/right/up/down of one another (adjacent, not counting diagonals).
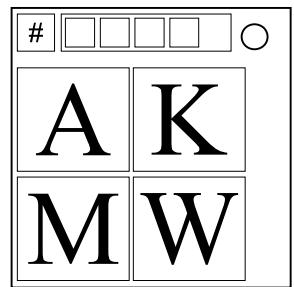
On the Subject of LED Encryption

Ooooh, shiny lights and buttons. Touchy touchy!

- Two to five LEDs are installed at the top of the module, representing stages. To disarm the module, these stages must be solved in order.

- Four buttons with four different letters are shown. The letters change at each stage.

- The current stage is indicated by a number in the top left of the module.

- The current stage's multiplier is indicated by that stage's LED according to the following table:

Red	Green	Blue	Yellow	Purple	Orange
2	3	4	5	6	7
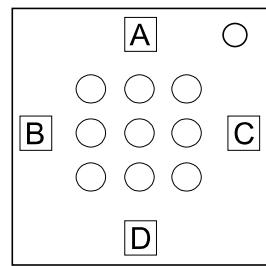
- Assign each letter of the alphabet to the numbers 0-25 (A = 0, B = 1, C = 2, etc.).

- A button is correct if its letter value, multiplied by the current stage's multiplier, modulo 26, is equal to the value of the letter on its diagonally opposite button.

- At each stage, press a correct button. There may be more than one possible answer.

On the Subject of LED Grid

Maybe they were Christmas lights in a previous life?

- The module consists of nine LEDs and four buttons.
- To disarm the module, press the four buttons in the correct order in accordance with the table below.
- Colours include red, blue, yellow, green, orange, pink, purple & white.
- Pairs refer to exactly two of a colour but do not have to be adjacent.
- Unlit LEDs should still be considered in the rules.
- For example, instances of two unlit LEDs would still be considered "a pair".


For 0 unlit LEDs:
If there are no orange LEDs, press C, D, A, B.
Otherwise, if there are three or more red LEDs, press D, A, C, B.
Otherwise, if there are two or more pairs, press B, A, C, D.
Otherwise, if the bottom row is all the same colour, press A, C, D, B.
Otherwise, press B, C, D, A.

For 1 unlit LED:
If every LED is unique, press D, C, B, A.
Otherwise, if the top row is all the same colour, press A, D, B, C.
Otherwise, if there are exactly three red, three pink or three purple LEDs,
press C, B, A, D.
Otherwise, if there is exactly one white, two blue or three yellow LEDs,
press B, A, D, C.
Otherwise, press D, B, A, C.

For 2 unlit LEDs:
If there are three or more purple LEDs, press A, D, C, B.
Otherwise, if there are exactly two pairs, press B, C, A, D.
Otherwise, if there is at least one white, one orange and one pink LED, press D, B, C, A.
Otherwise, if there is exactly one green, two yellow, three red or four blue LEDs,
press C, A, D, B.
Otherwise, press C, D, B, A.

For 3 unlit LEDs:
If there are exactly two orange LEDs, press B, D, A, C.
Otherwise, if there is more than one pair, press C, A, B, D.
Otherwise, if there are no purple LEDs, press D, C, A, B.
Otherwise, there is at least one red and one yellow LED, press A, C, B, D.
Otherwise, press B, D, C, A.

For 4 unlit LEDs:
If the centre row is all the same colour, press B, C, D, A.
Otherwise, if there are two or more green LEDs, press A, B, D, C.
Otherwise, if there are exactly two pairs, press C, B, D, A.
Otherwise, if there are no pink LEDs, press D, A, B, C.
Otherwise, press A, B, C, D.

On the Subject of Mashematics

Let's see here, 96 + 3 = 99. Oh god.

This module will show a math problem. Solve the math problem and press the "Push!" button that many times.[1][2] If the number of presses exceeds 99, you will get a strike and the number of presses will go to zero. If you submit a wrong answer you will get a strike and the number of presses will go back to 0.

[1] If the number is bigger than 99, subtract 50 until it's a number between 0 and 99.

[2] If the number is less than 0, add 50 until it's a number between 0 and 99.

On the Subject of Mastermind
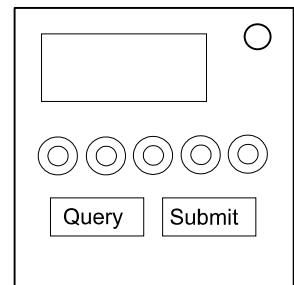
The classic code-breaking game, with a twist. Can you remember everything?

- To solve this module you must find the correct 5 color code.
- The colors used in this module are: White, Magenta, Yellow, Green, Red and Blue.
- Note that each color may be used multiple times.
- The LED colors can be cycled through by clicking the LEDs.
- By pressing the "Query" button, information about the currently entered code will be displayed.
  The left number gives the number of correct colors in the correct positions.
  The right number gives the number of correct colors in the wrong positions.
- When the correct code is entered, the module will be solved by pressing the "Submit" button. Submitting the wrong code will invoke a strike.
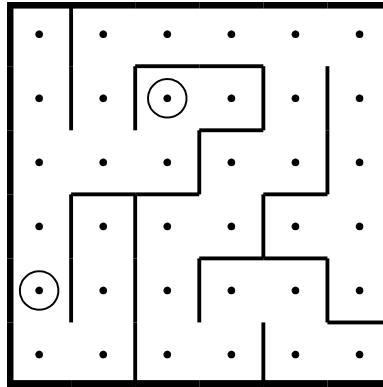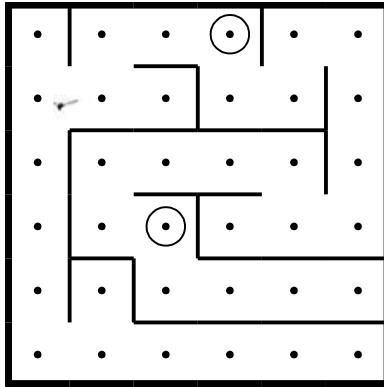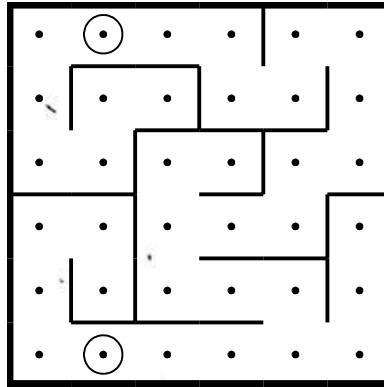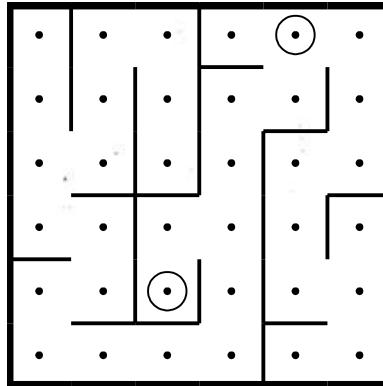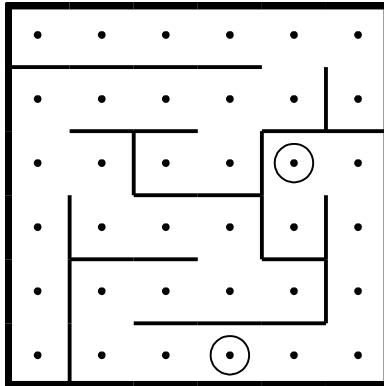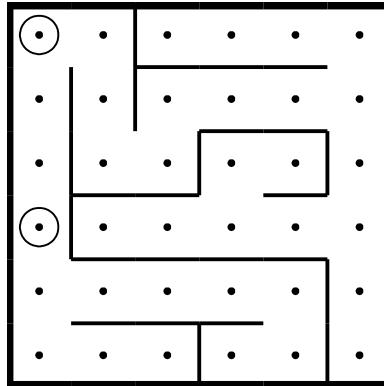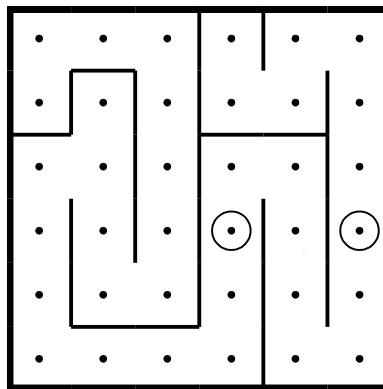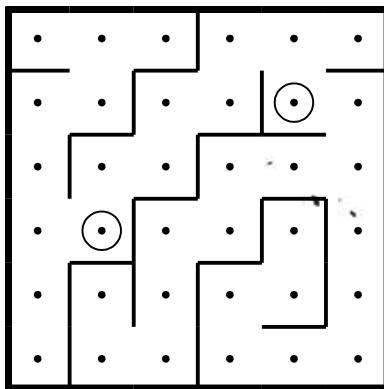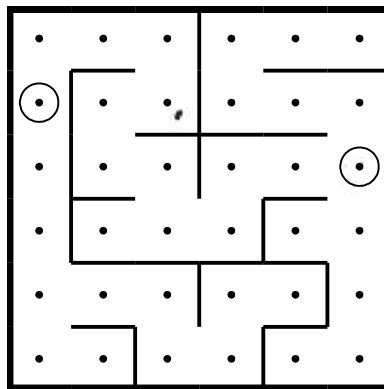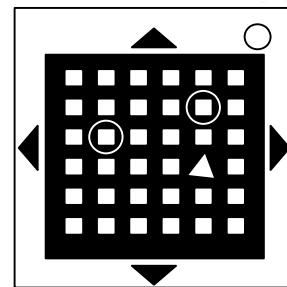
On the Subject of Mazes

This seems to be some kind of maze, probably stolen off of a restaurant placemat.
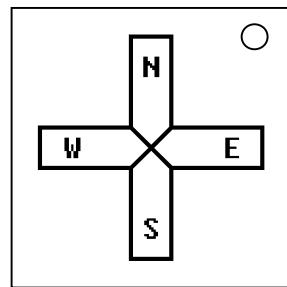
- Find the maze with matching circular markings.
- The defuser must navigate the white light to the red triangle using the arrow buttons.
- **Warning:** Do not cross the lines shown in the maze. These lines are invisible on the bomb.

On the Subject of Blind Maze
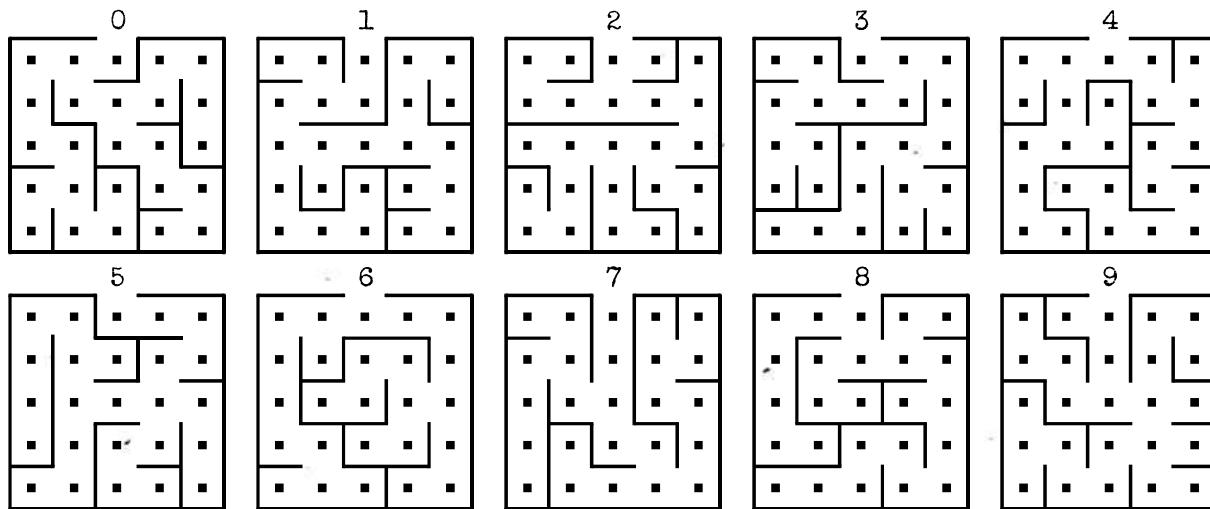
Not only do you have to find the exit, you have to find the beginning!

This module has four buttons labeled N for North, E for East, S for South, and W for West. The defuser must use these buttons to navigate through a maze they cannot see. Use the following steps to discover what the maze looks like, where you are in the maze, and which side of the maze the exit is on.

Step 1: Finding the Maze

- Take the last digit of the serial number and add the number of solved modules.
- If the number is above nine, subtract 10 until it is between 0 and 9.
- Locate the maze below with the same number as the result. This is your maze, but it may be rotated.

Step 2: <u>Finding the Rotation</u>

Use the first conditional that applies out of the following list to determine what rotation the maze has.

- If there are at least two red buttons, rotate the maze 90 degrees clockwise and then calculate starting position.
- Otherwise, if there are at least 5 batteries, calculate starting position and then rotate the maze 90 degrees clockwise.
- Otherwise, if there is an IND indicator, rotate the maze 180 degrees clockwise and then calculate starting position.
- Otherwise, if there are no yellow buttons and one red button, rotate the maze 90 degrees counter-clockwise and then calculate starting position.
- Otherwise, if there is at least 1 other type of maze-based module on the bomb*, calculate starting position and then rotate the maze 180 degrees clockwise.
- Otherwise, if there is at most 1 port type on the bomb, calculate starting position and then rotate the maze 90 degrees counter-clockwise.
- Otherwise, keep the maze as it is.

Step 3: <u>Finding the Starting Location</u>
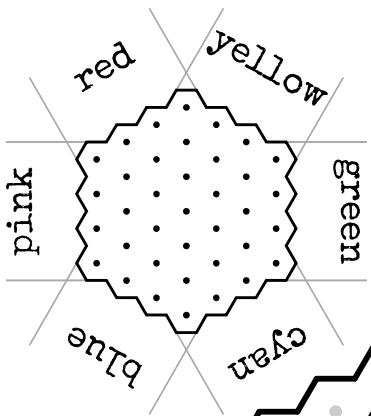
Look at each button and use the table below to determine it's value. Then, use these rules to determine the starting location in the maze:

- X Position: Add the values of the North and South buttons together.
- Y Position: Add the values of the East and West buttons together.
- If the sum is above 5, subtract 5 until the number is between 1 and 5.
- Column X moves from left to right and Row Y moves from top to bottom. The top left coordinate of the maze is [1,1].

	Red	Green	White	Gray	Yellow
North	1	5	2	2	3
East	3	1	5	5	2
West	2	5	3	1	4
South	3	2	4	3	2

---
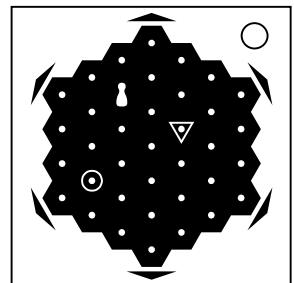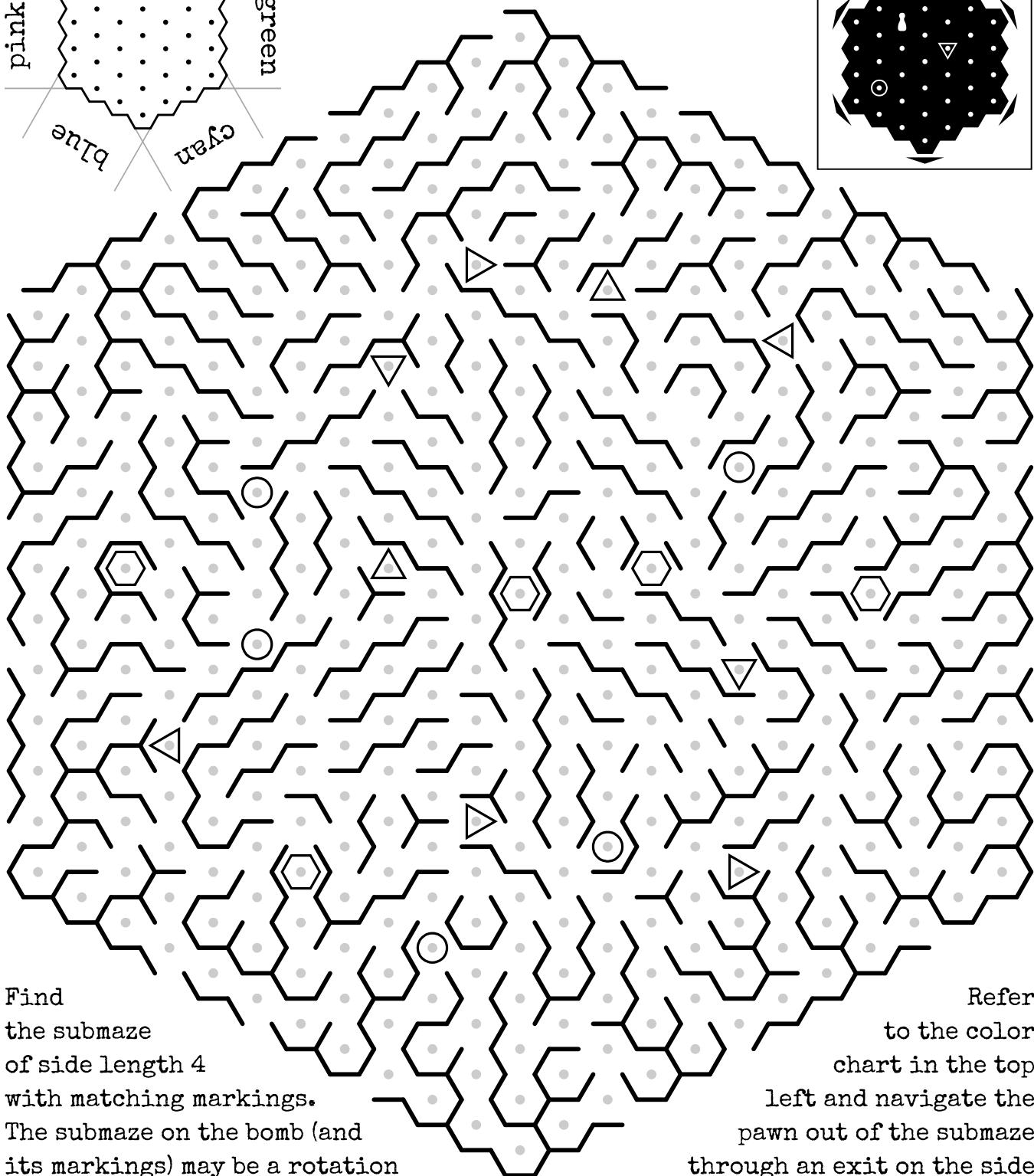
*Any modules with "Maze" in its name will be considered a maze-based module. Other <u>Blind Maze</u> modules will not count for this criterion.

red yellow

pink green

blue cyan

On the Subject of Hexamazes

Dammit Jim, I'm a doctor, not a honeybee!
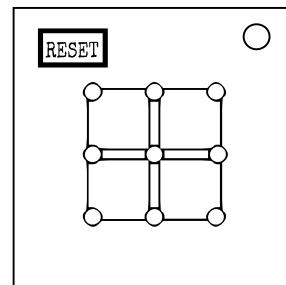
Find
the submaze
of side length 4
with matching markings.
The submaze on the bomb (and
its markings) may be a rotation
of the maze as it is shown above.

Refer
to the color
chart in the top
left and navigate the
pawn out of the submaze
through an exit on the side
indicated by the pawn's color.

Warning: Do not cross the lines shown in the
maze. These lines are invisible on the bomb.

On the Subject of Maze Scramblers

So pressing up several times will move you in literally every direction but up, that's almost as bad as 7 being the bottom left in a module with numbered buttons that are in a random order.

This module will present four colored buttons and 9 LEDS, as well as a reset button in the top left of the module.
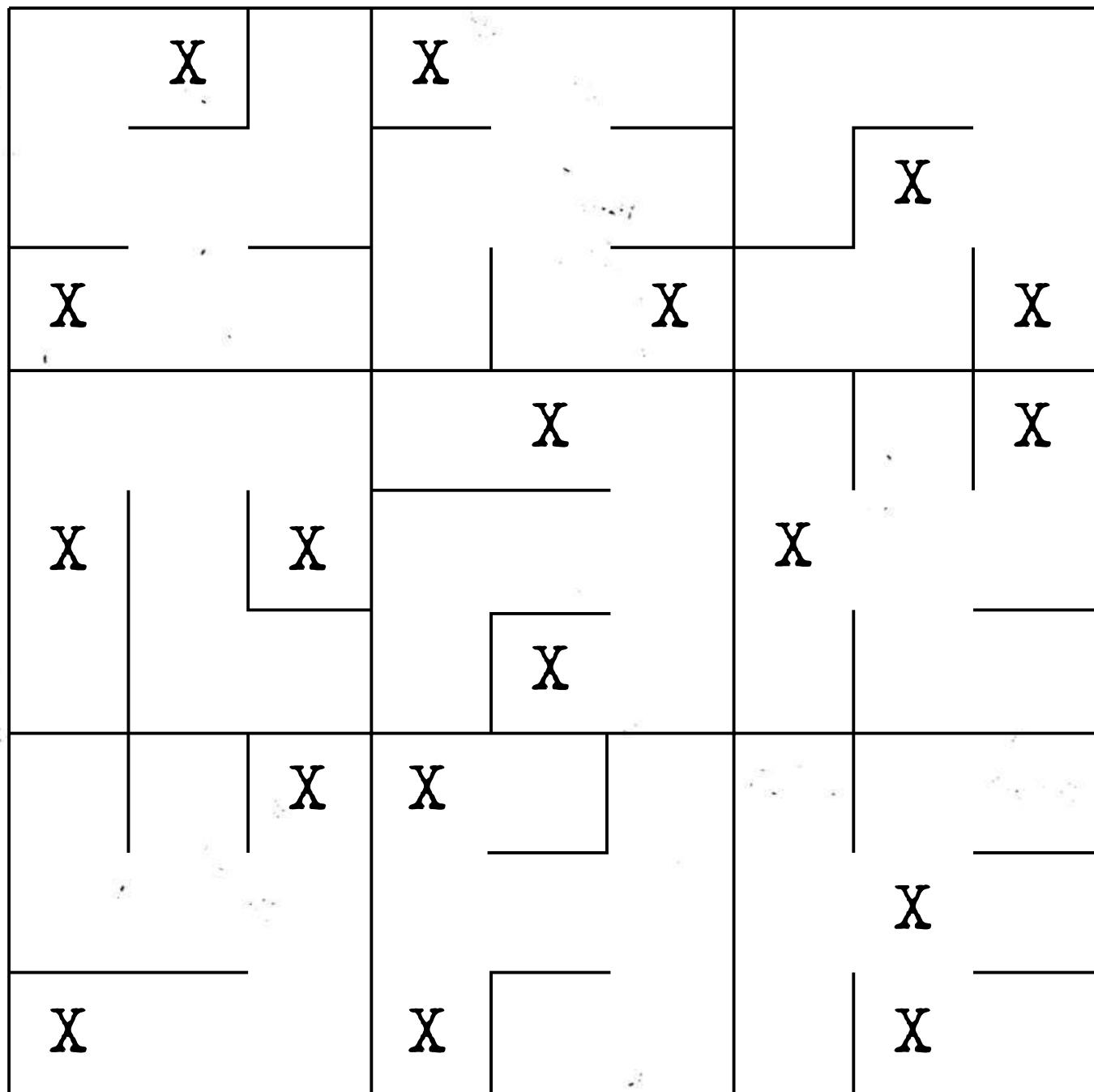
Use the yellow LEDs to locate your maze below. Navigate the blue LED to the red LED. When you are over a yellow LED, it will turn green. If the goal is over a yellow LED, it will turn orange.

Before interacting with the module, look at the top row of the table below to determine which button moves the blue LED in which direction. Each interaction with the buttons will change the direction the buttons will go in. Follow the table down each time you press a button, repeating to the top if you reach the bottom row.

When hitting a wall, the bomb will register a strike, the blue LED will reset to its original position, and your presses will be cleared, reverting your position on the table to the top.

	RED	BLUE	GREEN	YELLOW
1	UP	LEFT	RIGHT	DOWN
2	LEFT	RIGHT	UP	DOWN
3	RIGHT	LEFT	UP	RIGHT
4	DOWN	UP	LEFT	RIGHT
5	DOWN	RIGHT	LEFT	UP
6	RIGHT	UP	DOWN	LEFT
7	UP	LEFT	RIGHT	DOWN
8	UP	RIGHT	LEFT	DOWN
9	DOWN	UP	RIGHT	LEFT
0	LEFT	DOWN	UP	RIGHT
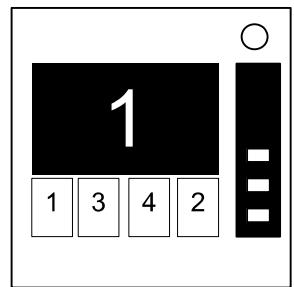
The X's in the table below refer to the positions of the yellow LEDs of each maze.

On the Subject of Memory

Memory is a fragile thing but so is everything else when a bomb goes off, so pay attention!

- Press the correct button to progress the module to the next stage. Complete all stages to disarm the module.
- Pressing an incorrect button will reset the module back to stage 1.
- Button positions are ordered from left to right.

Stage 1:

If the display is 1, press the button in the second position.
If the display is 2, press the button in the second position.
If the display is 3, press the button in the third position.
If the display is 4, press the button in the fourth position.

Stage 2:

If the display is 1, press the button labeled "4".
If the display is 2, press the button in the same position as you pressed in stage 1.
If the display is 3, press the button in the first position.
If the display is 4, press the button in the same position as you pressed in stage 1.

Stage 3:

If the display is 1, press the button with the same label you pressed in stage 2.
If the display is 2, press the button with the same label you pressed in stage 1.
If the display is 3, press the button in the third position.
If the display is 4, press the button labeled "4".

Stage 4:

If the display is 1, press the button in the same position as you pressed in stage 1.
If the display is 2, press the button in the first position.
If the display is 3, press the button in the same position as you pressed in stage 2.
If the display is 4, press the button in the same position as you pressed in stage 2.

Stage 5:
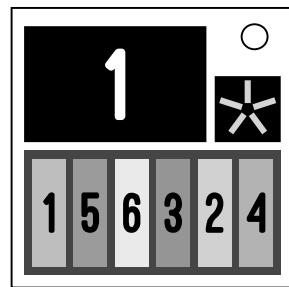
If the display is 1, press the button with the same label you pressed in stage 1.
If the display is 2, press the button with the same label you pressed in stage 2.
If the display is 3, press the button with the same label you pressed in stage 4.
If the display is 4, press the button with the same label you pressed in stage 3.

On the Subject of Horrible Memory

I thought Memory only went up to 4? Geez, I can't remember anything these days...

- Press the correct button to progress the module to the next stage. Complete all stages to disarm the module.
- Pressing an incorrect button will reset the module back to stage 1 and cause a strike.
- Button positions are ordered from left to right.

Stage 1:

If the display is 1, press the button labelled 6.
If the display is 2, press the button in the 1st position.
If the display is 3, press the green button.
If the display is 4, press the button in the 3rd position.
If the display is 5, press the button labelled 2.
If the display is 6, press the orange button.

Stage 2:

If the display is 1, press the button in the position that was pressed at stage 1.
If the display is 2, press the purple button.
If the display is 3, press the button labelled 1.
If the display is 4, press the button with the label that was pressed at stage 1.
If the display is 5, press the button in the 6th position.
If the display is 6, press the button with the colour that was pressed at stage 1.

Stage 3:

If the display is 1, press the button with the label that was in the 4th position at stage 1.
If the display is 2, press the button in the position that was green at stage 2.
If the display is 3, press the button with the colour that was labelled 5 at stage 2.
If the display is 4, press the button with the label that was in the 1st position at stage 1.
If the display is 5, press the button in the position that was pressed at stage 2.
If the display is 6, press the button with the colour that was in the 3rd position at stage 1.

Stage 4:

If the display is 1, press the button in the position that was labelled 2 at stage 1.

If the display is 2, press the button with the label that was in the 2nd position at stage 3.

If the display is 3, press the button with the colour that was pressed at stage 2.

If the display is 4, press the button in the position that was pressed at stage 3.

If the display is 5, press the button with the colour that was labelled 4 at stage 1.

If the display is 6, press the button with the label that was in the 6th position at stage 3.

Stage 5:

If the display is 1, press the button with the colour that was in the 3rd position at stage 4.

If the display is 2, press the button in the position that was labelled 6 at stage 3.

If the display is 3, press the button with the label that was pressed at stage 4.

If the display is 4, press the button with the label that was red at stage 1.

If the display is 5, press the button with the colour that was pressed at stage 3.

If the display is 6, press the button in the position that was blue at stage 2.

On the Subject of Modern Cipher

The Roman warlord Caesar had his own personal way to encrypt his data. We could think about him as the father of the modern cryptography. But you are a qualified soldier so you won't have problems in decoding our message, don't you?

You are given an encrypted word. Decrypt it, write it in the second box and press OK to solve the module.

To decrypt the word start by finding the key.

Add every digit on the serial and then, referring to "Letter-Number Relation" below, follow the cases to find your word.

Keep in mind that if you have strikes*, you must add those strikes to the resulting key.

Case 01: The serial number contains a vowel:

Every letter of the word must be shifted backwards by the key

Keep in mind that if you go under the 0, the next number will be 25 because numbers go only from 0 to 25.

Case 02: The bomb contains more than 3 batteries:

Every letter of the word must be shifted forwards by the key

Keep in mind that if you go over the 25, the next number will be 0 because numbers go only from 0 to 25.

Case 03: There is a serial port:

If this is your first word, refer to Case 01, otherwise go on.

Add to the key the number of letters of the last word you decrypted, then proceed as like as in Case 01.

Keep in mind that if you go under the 0, the next number will be 25 because numbers go only from 0 to 25.

Case 04: None of the previous cases matches:

Add to the key the number of solved modules at the moment of the word generation then proceed as like as in Case 02.

Keep in mind that if you go over the 25, the next number will be 0 because numbers go only from 0 to 25.

---

*You want to add only the strikes that you have when the word is generated.
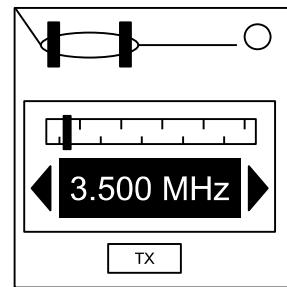
Letter-Number Relation

Letter	Number
Q	0
W	1
E	2
R	3
T	4
Y	5
U	6
I	7
O	8
P	9
A	10
S	11
D	12
F	13
G	14
H	15
J	16
K	17
L	18
Z	19
X	20
C	21
V	22
B	23
N	24
M	25

On the Subject of Morse Code

An antiquated form of naval communication? What next? At least it's genuine Morse Code, so pay attention and you might just learn something.

- Interpret the signal from the flashing light using the Morse Code chart to spell one of the words in the table.
- The signal will loop, with a long gap between repetitions.
- Once the word is identified, set the corresponding frequency and press the transmit (TX) button.

How to Interpret

1. A short flash represents a dot.
2. A long flash represents a dash.
3. There is a long gap between letters.
4. There is a very long gap before the word repeats.

A ● ▬
B ▬ ● ● ●
C ▬ ● ▬ ●
D ▬ ● ●
E ●
F ● ● ▬ ●
G ▬ ▬ ●
H ● ● ● ●
I ● ●
J ● ▬ ▬ ▬
K ▬ ● ▬
L ● ▬ ● ●
M ▬ ▬
N ▬ ●
O ▬ ▬ ▬
P ● ▬ ▬ ●
Q ▬ ▬ ● ▬
R ● ▬ ●
S ● ● ●
T ▬

U ● ● ▬
V ● ● ● ▬
W ● ▬ ▬
X ▬ ● ● ▬
Y ▬ ● ▬ ▬
Z ▬ ▬ ● ●
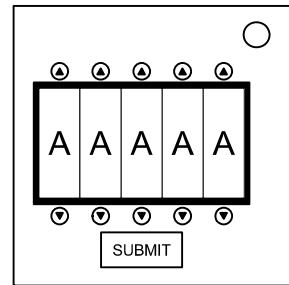
1 ● ▬ ▬ ▬ ▬
2 ● ● ▬ ▬ ▬
3 ● ● ● ▬ ▬
4 ● ● ● ● ▬
5 ● ● ● ● ●
6 ▬ ● ● ● ●
7 ▬ ▬ ● ● ●
8 ▬ ▬ ▬ ● ●
9 ▬ ▬ ▬ ▬ ●
0 ▬ ▬ ▬ ▬ ▬

If the word is:	Respond at frequency:
shell	3.505 MHz
halls	3.515 MHz
slick	3.522 MHz
trick	3.532 MHz
boxes	3.535 MHz
leaks	3.542 MHz
strobe	3.545 MHz
bistro	3.552 MHz
flick	3.555 MHz
bombs	3.565 MHz
break	3.572 MHz
brick	3.575 MHz
steak	3.582 MHz
sting	3.592 MHz
vector	3.595 MHz
beats	3.600 MHz

3.500 MHz

TX

On the Subject of Passwords

Fortunately this password doesn't seem to meet standard government security requirements: 22 characters, mixed case, numbers in random order without any palindromes above length 3.

- The buttons above and below each letter will cycle through the possibilities for that position.
- Only one combination of the available letters will match a password below.
- Press the submit button once the correct word has been set.
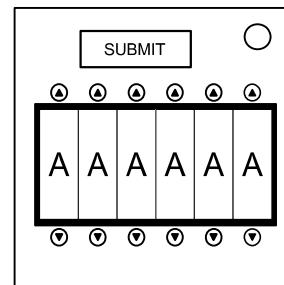
about	after	again	below	could
every	first	found	great	house
large	learn	never	other	place
plant	point	right	small	sound
spell	still	study	their	there
these	thing	think	three	water
where	which	world	would	write

On the Subject of Extended Passwords

*AAAAAA. No? AAAAAC. Wait, did we do "AAAAAB"? *sigh* AAAAAA...*

- The buttons above and below each letter will cycle through the possibilities for that position.
- Only one combination of the available letters will match a password below.
- Press the submit button once the correct word has been set.
- The passwords are now length 6, and there's more passwords in total; 52 to be exact, upgraded from just 30.

adjust	anchor	bowtie	button
cipher	corner	dampen	demote
enlist	evolve	forget	finish
geyser	global	hammer	helium
ignite	indigo	jigsaw	juliet
karate	keypad	lambda	listen
matter	memory	nebula	nickel
overdo	oxygen	peanut	photon
quartz	quebec	resist	riddle
sierra	strike	teapot	twenty
untold	ultima	victor	violet
wither	wrench	xenons	xylose
yellow	yogurt	zenith	zodiac

On the Subject of Piano Keys
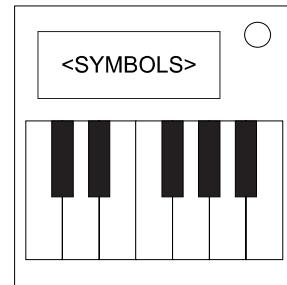
What do you get when you drop a piano down a mine shaft? A flat minor.

See Appendix A for indicator identification reference.
See Appendix B for battery identification reference.
See Appendix C for port identification reference.
See the next page for piano/keyboard reference.
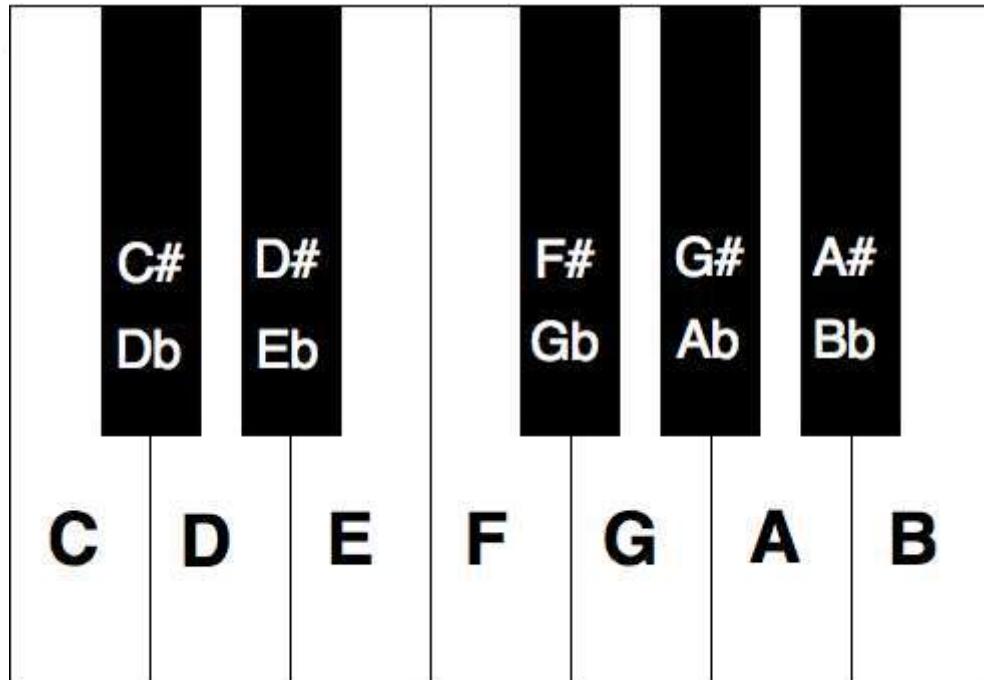
- A piano keys module will present with 3 musical symbols in the top indicator and a 12-note keyboard to input with.
- Each rule consists of one or more required symbol(s) and optional further requirements based on the bomb casing.
- Follow the list of rules down until one matches the criteria for the module; then execute the sequence of notes listed.
- A failed attempt will require re-entry of the entire note sequence.

Required Symbol(s)	Further Requirements	Note Sequence
♭	Last digit of serial number is even	B♭ B♭ B♭ B♭ G♭ A♭ B♭ A♭ B♭
� or ♯	2 or more battery holders	E♭ E♭ D D E♭ E♭ D E♭ E♭ D D E♭
♮ and ⌢	*(No other requirements)*	E F♯ F♯ F♯ F♯ E E E
¢ or ∾	RCA port is present	B♭ A B♭ F E♭ B♭ A B♭ F E♭
𝄡	SND indicator is present and lit	E E E C E G G
⪢ or ⌢ or �	3 or more batteries	C♯ D E F C♯ D E F B♭ A
♭ and ♯	*(No other requirements)*	G G C G G C G C
¢ or ⪢	Serial number contains a 3, 7 or 8	A E F G F E D D F A
♮ or ∾ or 𝄡	*(No other requirements)*	G G G E♭ B♭ G E♭ B♭ G
(No requirement)	*(No other requirements)*	B D A G A B D A

Piano/Keyboard Reference

Use the following graphic as a reference to how tones are mapped onto a standard 12-note piano/keyboard.
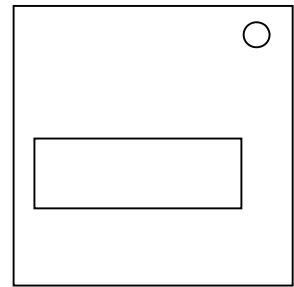
On the Subject of Pie

What is the point of naming this module 'pie' if there is no pie?! The pie is a lie!

See Appendix π for pi identification reference.

A Pie module shows five consecutive significant digits within the first 500 digits of pi (π). The digits are ordered from left to right.

Search for the position of the first digit, from which the five digits begin. Add this position to the number displayed on the module. Take this sum modulo 100. This result will be referred to as the number X.

Add up all the five digits, then take the least significant digit. This digit will be referred to as the number Y.

Follow all the rules below from top to bottom, pressing each digit only once:

1. If X is a prime number, press the first digit.
2. If X and Y are either both even or both odd, press the second digit.
3. If X is a multiple of three, press the third digit.
4. If Y is not zero, and X is a multiple of Y, press the fourth digit.
5. Press all the digits that are not pressed yet from right to left, starting from the fifth digit.

Appendix π: Pi Identification Reference

Here are the first 500 significant digits of pi.

31415926535897932384
62643383279502884197
16939937510582097494
45923078164062862089
98628034825342117067
98214808651328230664
70938446095505822317
25359408128481117450
28410270193852110555
96446229489549303819
64428810975665933446
12847564823378678316
52712019091456485669
23460348610454326648
21339360726024914127
37245870066063155881
74881520920962829254
09171536436789259036
00113305305488204665
21384146951941511609
43305727036575959195
30921861173819326117
93105118548074462379
96274956735188575272
48912279381830119491
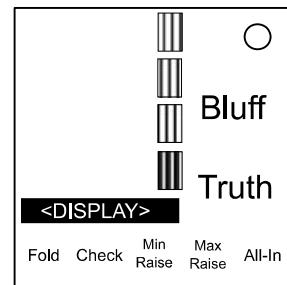
On the Subject of Poker

Usually in poker, the wrong call means losing a lot of money. Here, it means death.

SEE APPENDIX PK71 FOR POKER HAND RANKINGS.

The module will display a single face-up card.

You must push two of the buttons and one of the face-down cards in order to disarm it.

Use the given card to determine which of the four flow charts you should use.

Use the flow charts to determine your 5-card poker hand and press the appropriate button.
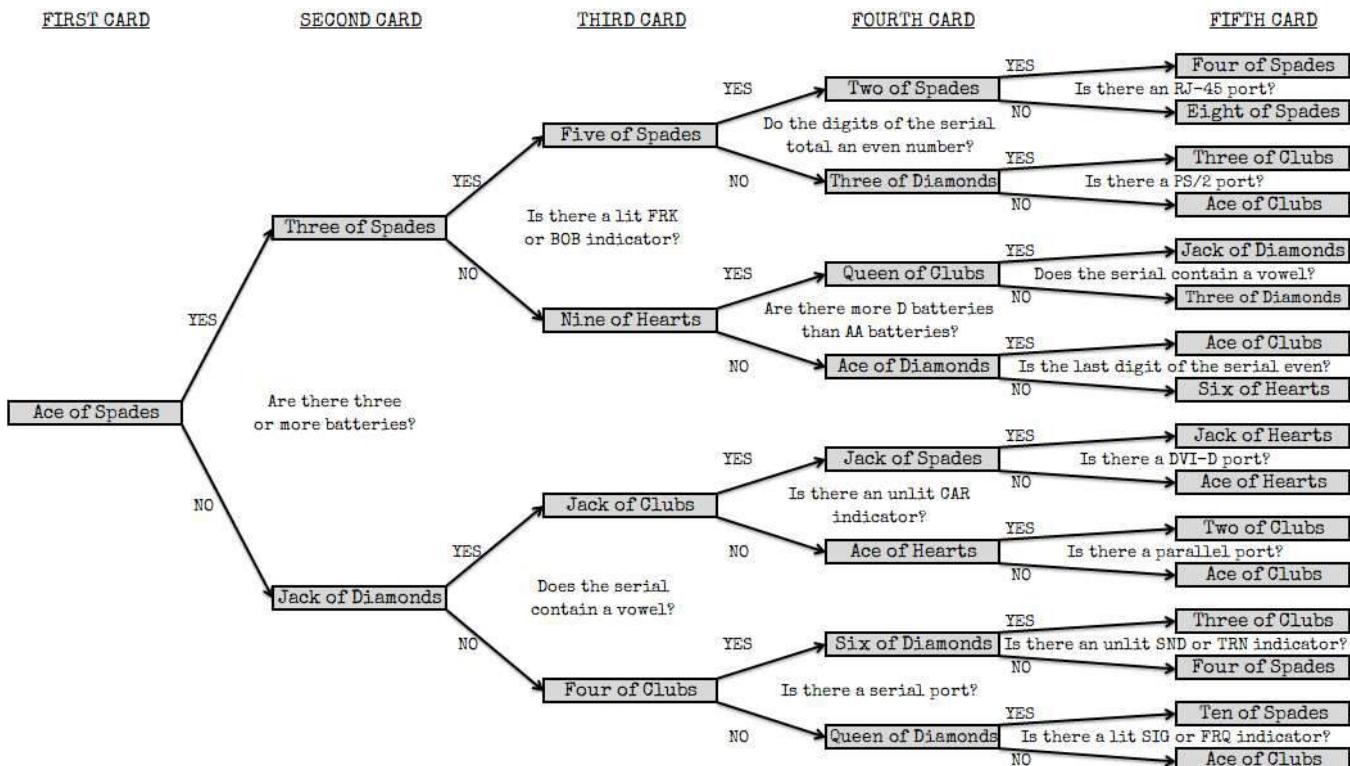
Your opponent will then respond. Use the two-way table to determine whether the response is the "truth" or a "bluff".

Your opponent will then make a bet. Use the betting rules to determine which of the four final cards you should press.

- If you have NO HAND, press FOLD.
- If you have A PAIR or TWO PAIR, press CHECK.
- If you have THREE OF A KIND or A STRAIGHT, press MIN RAISE.
- If you have A FLUSH or A FULL HOUSE, press MAX RAISE.
- If you have FOUR OF A KIND or A STRAIGHT FLUSH, press ALL-IN.

Flow Charts

Ace of Spades:

King of Hearts:

FIRST CARD	SECOND CARD	THIRD CARD	FOURTH CARD	FIFTH CARD

King of Hearts

Do the digits of the serial total an odd number?

YES → **Four of Clubs**

Are there any batteries?

YES → **Four of Hearts**

Is there a lit IND, MSA or TRN indicator?

YES → **Four of Spades** — Is there a Stereo RCA port? — YES → **Four of Diamonds** / NO → **King of Clubs**

NO → **King of Spades** — Is there an RJ-45 and a Serial port? — YES → **Three of Clubs** / NO → **King of Clubs**

NO → **Ace of Hearts**

Is there a PS/2 or DVI-D port?

YES → **Two of Clubs** — Is there a lit SND indicator? — YES → **Three of Spades** / NO → **Four of Diamonds**

NO → **Queen of Spades** — Is there an unlit TRN or FRK indicator? — YES → **Three of Clubs** / NO → **Five of Clubs**

NO → **Three of Diamonds**

Is there a parallel port?

YES → **Three of Spades**

Are there three or fewer AA batteries?

YES → **Two of Diamonds** — Is there an unlit MSA or a lit NSA indicator? — YES → **Nine of Clubs** / NO → **Three of Hearts**

NO → **Seven of Spades** — Is there a lit FRQ indicator? — YES → **Two of Clubs** / NO → **Seven of Diamonds**

NO → **Four of Hearts**

Is there an unlit BOB or FRQ indicator?

YES → **Ten of Clubs** — Are there more AA than D batteries? — YES → **King of Clubs** / NO → **Queen of Spades**

NO → **Two of Hearts** — Are there five or fewer batteries? — YES → **Ace of Hearts** / NO → **Nine of Clubs**

Five of Diamonds:

FIRST CARD	SECOND CARD	THIRD CARD	FOURTH CARD	FIFTH CARD

Five of Diamonds

Are there more AA batteries than D batteries?

YES → **Three of Clubs**

Does the serial contain a vowel?

YES → **Two of Spades**

Is there more than one port?

YES → **Ace of Hearts** — Is there an unlit CLR or a lit CAR indicator? — YES → **Four of Diamonds** / NO → **Six of Diamonds**

NO → **Six of Hearts** — Is there a lit MSA or unlit NSA indicator? — YES → **Four of Spades** / NO → **Three of Diamonds**

NO → **Nine of Hearts**

Is there a PS/2 or an RJ-45 port?

YES → **Ten of Spades** — Are there any unlit indicators? — YES → **Jack of Clubs** / NO → **Nine of Spades**

NO → **Jack of Spades** — Is there an unlit CLR indicator? — YES → **Queen of Hearts** / NO → **Five of Hearts**

NO → **Nine of Diamonds**

Is the last digit of the serial an odd number?

YES → **Four of Diamonds**

Is there a lit BOB or an unlit FRQ or SIG indicator?

YES → **King of Diamonds** — Are there any ports? — YES → **King of Hearts** / NO → **Queen of Diamonds**

NO → **Ace of Diamonds** — Is there a parallel port? — YES → **Two of Diamonds** / NO → **Six of Spades**

NO → **Six of Diamonds**

Are there any lit indicators?

YES → **Seven of Diamonds** — Are there fewer than three ports? — YES → **Eight of Diamonds** / NO → **Eight of Hearts**

NO → **Five of Clubs** — Is there a Stereo RCA and a DVI-D port? — YES → **Five of Spades** / NO → **Six of Spades**

Two of Clubs:

| FIRST CARD | SECOND CARD | THIRD CARD | FOURTH CARD | FIFTH CARD |

Two of Clubs

YES → **Six of Clubs**

Is there a lit TRN, BOB or IND indicator?

NO → **Three of Hearts**

Six of Clubs — *Are there five or fewer batteries?*

YES → **Ten of Clubs** — *Is there a DVI-D or a Stereo RCA port?*
- YES → **Jack of Hearts** — *Is the last letter of the serial a consonant?*
  - YES → **Queen of Clubs**
  - NO → **Two of Diamonds**
- NO → **Jack of Clubs** — *Is the last digit of the serial odd?*
  - YES → **Four of Clubs**
  - NO → **King of Clubs**

NO → **Ace of Spades** — *Do the digits on the serial add up to more than twelve?*
- YES → **Two of Diamonds** — *Is there a PS/2 and a parallel port?*
  - YES → **Six of Diamonds**
  - NO → **Two of Hearts**
- NO → **Six of Hearts** — *Are there three or fewer ports?*
  - YES → **Ace of Hearts**
  - NO → **Seven of Spades**

Three of Hearts — *Does the serial contain an even number of letters?*

YES → **Four of Hearts** — *Is there a parallel port and a serial port?*
- YES → **Five of Spades** — *Are there more AA than D batteries?*
  - YES → **Six of Clubs**
  - NO → **Five of Diamonds**
- NO → **Six of Hearts** — *Are there more D than AA batteries?*
  - YES → **Five of Hearts**
  - NO → **King of Hearts**

NO → **King of Hearts** — *Is there an RJ-45 port?*
- YES → **King of Clubs** — *Are there more than two D batteries?*
  - YES → **Three of Spades**
  - NO → **King of Spades**
- NO → **Four of Diamonds** — *Are there more than two batteries?*
  - YES → **Jack of Clubs**
  - NO → **Two of Diamonds**

Bluff or Truth?

Starter card					
Ace	King	Five	Two		
Truth	Truth	Truth	Bluff	"Terrible play!"	Opponent Response
Bluff	Truth	Truth	Bluff	"Awful play!"	
Truth	Bluff	Bluff	Bluff	"Really?"	
Bluff	Bluff	Truth	Bluff	"Really, really?"	
Truth	Bluff	Bluff	Truth	"Sure about that?"	
Bluff	Truth	Truth	Truth	"Are you sure?"	

Betting Rules

$25 Bet:

If the first card is red and there is a lit BOB indicator, press the fourth card.

Otherwise, if your opponent said "Awful play!" and the starter card was the Ace of Spades, press the first card.

Otherwise, if there is an unlit FRQ indicator and the fourth card is black, press the second card.

Otherwise, if there is at least one diamond and your opponent said "Really?" or "Really, really?", press the third card.

Otherwise, if the fourth card is a spade and there are more than four batteries, press the third card.

Otherwise, if the third card is a diamond and the second card is not a club, press the second card.

Otherwise, if your opponent said "Are you sure?" and the starter card was the Two of Clubs, press the first card.

Otherwise, if the starter card was the Five of Diamonds press the fourth card.

Otherwise, if the second card is a club and there is no RJ-45 port, press the second card.

Otherwise, press the first card.

$50 Bet:

If your opponent said "Sure about that?" and the fourth card is a heart, press the first card.

Otherwise, if there are no clubs and the starter card was the Two of Clubs, press the third card.

Otherwise, if a heart appears anywhere above a spade and there are no diamonds press the fourth card.

Otherwise, if the first card is a heart and the starter card was not the King of Hearts, press the second card.

Otherwise, if your opponent said "Really, really?" and the first or second card are hearts, press the fourth card.

Otherwise, if the starter card was the Five of Diamonds and there is a parallel port, press the first card.

Otherwise, if there is a lit TRN indicator and there is at least one black card, press the second card.

Otherwise, if your opponent said "Terrible play!", press the third card.

Otherwise, if the digits of the serial number add up to less than ten press the first card.

Otherwise, press the third card.

$100 Bet:

If your opponent said "Really, really?", press the second card.
Otherwise, if your opponent said, "Really?", press the fourth card.
Otherwise, if there are no D batteries and the starter card was the Ace of Spades,
press the first card.
Otherwise, if the digits of the serial number add up to a prime number and there
is at least one heart, press the fourth card.
Otherwise, if a club and a spade appear and your opponent said "Sure about
that?", press the third card.
Otherwise, if a club and a spade appear next to each other, press the second card.
Otherwise, if there is an unlit MSA indicator, press the first card.
Otherwise, if there is at least one diamond, press the third card.
Otherwise, if your opponent said "Awful play!", press the fourth card.
Otherwise, press the second card.

$500 Bet:

If there is more than one club, press the third card.
Otherwise, if the serial number contains a vowel and there is at least one spade,
press the second card.
Otherwise, if there are no ports and there is at least one heart, press the first
card.
Otherwise, if there are no red cards, press the fourth card.
Otherwise, if your opponent said "Are you sure?", press the fourth card.
Otherwise, if there are no lit indicators and the first card is a heart, press the
third card.
Otherwise, if there is at least one unlit indicator and the second card is a club,
press the second card.
Otherwise, if your opponent said "Really?" and there are no black cards, press
the first card.
Otherwise, if there is more than one D battery, press the third card.
Otherwise, press the fourth card.
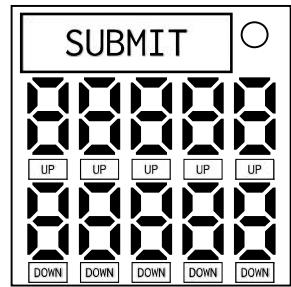
On the Subject of Quintuples

"Quintuple" has its roots in the Latin for five. There are lots of fives to think about here.

- The module consists of a cycling number display and an input matrix.
- Five digits will cycle in five positions and in one of five colours. The cycling number will be blank at the start of each cycle.
- Using the table below, enter the correct response code to disarm the module.
- For each digit, if the colour matches with the relevant cell in the table, apply the match rule for that digit.
- Apply the corresponding process to each iteration of the cycle and enter your response in iteration order, followed by the submit button.
- In each instance, the modulo of the flashes refers to the total number of that colour flash on the module.
- Entering an incorrect response will cause a strike.
- The digit zero refers to the number 10 for the purpose of your calculation.
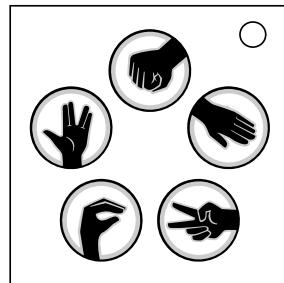
		POSITION				PROCESS
		1	**2**	**3**	**4**	**5**	
I T E R A T I O N	**1**	Red Orange	Blue	Pink	Green	Orange Blue	Sum; modulo (orange + red flashes); modulo 10
	2	Blue	Pink Red	Orange	Red	Green Pink	Sum; modulo (blue + pink flashes); modulo 10
	3	Orange	Red	Green Orange	Blue Green	Pink	Sum; modulo (red + green flashes); modulo 10
	4	Green	Orange Pink	Blue Green	Pink	Red	Sum; modulo (blue + orange flashes); modulo 10
	5	Pink Blue	Green	Red	Orange Red	Blue	Digit of the tens column of the sum; + pink flashes; + green flashes; modulo 10
Match Rule		**Add 7**	**Add 13**	**Double**	**Triple**	**Halve and round down**	

On the Subject of Rock-Paper-Scissors-Lizard-Spock

Anecdotal evidence suggests that in the game of Rock-Paper-Scissors, players familiar with each other will tie 75 to 80% of the time due to the limited number of outcomes. Rock-Paper-Scissors-Lizard-Spock was created by Internet pioneer Sam Kass as an improvement on the classic game. All hail Sam Kass. Hail.

To disarm this module, determine the correct signs to press.

First, determine the decoy. If the five signs are arranged in a regular pentagon, there is no decoy. Otherwise, the decoy is the one that is in the middle of the arrangement or in the middle in a line of three (horizontal, diagonal or vertical).
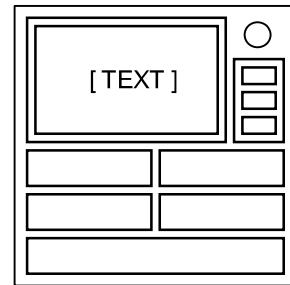
Next, go through the rows of the following table and determine the highest-scoring sign in each row. Stop at the first row in which there's no tie and the highest-scoring sign is not the decoy. Then press the signs on the module that beat this sign. If no row applies, press all signs except the decoy.

Which sign beats which? It's very simple. Scissors cuts paper. Paper covers rock. Rock crushes lizard. Lizard poisons Spock. Spock smashes scissors. Scissors decapitates lizard. Lizard eats paper. Paper disproves Spock. Spock vaporizes rock. And, as it always has, rock crushes scissors.

# of occurrences of:	Rock	Paper	Scissors	Lizard	Spock
serial number letter Skip this row if the serial number contains an X or Y.	R, O	P, A	S, I	L, Z	C, K
port Skip this row if a PS/2 port is present.	RJ-45	Parallel	Serial	DVI-D	Stereo RCA
lit indicator Skip this row if a lit TRN indicator is present.	FRK, FRQ	BOB, IND	CAR, SIG	CLR, NSA	SND, MSA
unlit indicator Skip this row if an unlit TRN indicator is present.	FRK, FRQ	BOB, IND	CAR, SIG	CLR, NSA	SND, MSA
serial number digit	0, 5	3, 6	1, 9	2, 8	4, 7

On the Subject of Sea Shells

Clear communication is crucial when defusing bombs. One can only assume that this module doesn't want to be defused.

- The Sea Shells module consists of a display and five buttons.
- The display shows a phrase. The first two words of the phrase refer to a row of Table 1. The third and fourth words refer to a column of Table 1. The remainder of the phrase refers to Table 2.
- Table 1 will give a code, and Table 2 will provide a key to turn the code into a sequence of words.
- The buttons must be used to input the sequence of words. Pressing an incorrect button will result in a strike and reset the current stage of the module.
- Inputting a correct sequence three times will disarm the module.

Table 1:

	SEA SHELLS	SHE SHELLS	SEA SELLS	SHE SELLS
SHE SELLS	BDABDAB	ACEEAC	EACEACE	DAABDAB
SHE SHELLS	BEEBBE	CDCCDB	EAEAEA	BEEDA
SEA SHELLS	ABABA	EAAEEA	DBEAC	ABDBAA
SEA SELLS	ACACEAC	DBAEC	EBDADAB	CECEC
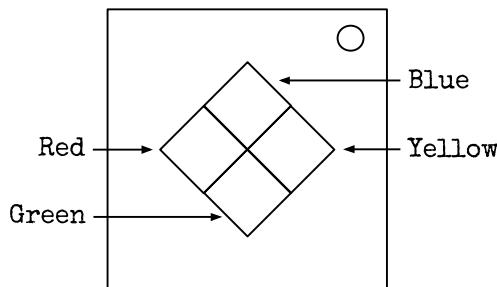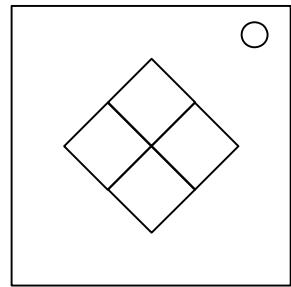
Table 2:

ON THE SEA SHORE	A = shoe D = sit	B = shih tzu E = sushi	C = she
ON THE SHE SORE	A = can D = 2	B = toucan E = cancan	C = tutu
ON THE SHE SURE	A = witch D = twitch	B = switch E = stitch	C = itch
ON THE SEESAW	A = burglar alarm D = burger	B = Bulgaria E = llama	C = armour

On the Subject of Simon Says

This is like one of those toys you played with as a kid where you have to match the pattern that appears, except this one is a knockoff that was probably purchased at a dollar store.

1. One of the four colored buttons will flash.
2. Using the correct table below, press the button with the corresponding color.
3. The original button will flash, followed by another. Repeat this sequence in order using the color mapping.
4. The sequence will lengthen by one each time you correctly enter a sequence until the module is disarmed.

If the serial number contains a vowel:

		Red Flash	Blue Flash	Green Flash	Yellow Flash
	No Strikes	Blue	Red	Yellow	Green
Button to press:	1 Strike	Yellow	Green	Blue	Red
	2+ Strikes	Green	Red	Yellow	Blue
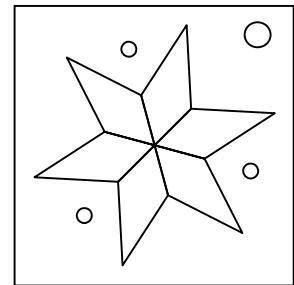
If the serial number does <u>not</u> contain a vowel:

		Red Flash	Blue Flash	Green Flash	Yellow Flash
	No Strikes	Blue	Yellow	Green	Red
Button to press:	1 Strike	Red	Blue	Yellow	Green
	2+ Strikes	Yellow	Green	Blue	Red

On the Subject of Simon Screams

He's angry! He's furious! He's enraged! He's had it!

- This module has six lights colored red, orange, yellow, green, blue and purple. These will flash in a sequence that grows longer with each stage. There are 3 stages.
- At each stage, consider the whole sequence of flashes. In the large table, find the first applicable row and the correct column. From that entry, take the letter corresponding to the current stage (e.g. in the second stage, take the second letter) and look at its corresponding column in the smaller table.
- Go through that column from top to bottom and press every color whose condition applies. The colors are (R)ed, (O)range, (Y)ellow, (G)reen, (B)lue, (P)urple, and "#" means "serial number".
- Every time the sequence flashes again, your current stage's input is reset.

	A	C	D	E	F	H
≥ 3 indicators	Y	O	G	R	B	P
≥ 3 ports	P	Y	R	B	O	G
≥ 3 numbers in #	O	G	B	P	R	Y
≥ 3 letters in #	G	B	O	Y	P	R
≥ 3 batteries	R	P	Y	O	G	B
≥ 3 bat. holders	B	R	P	G	Y	O
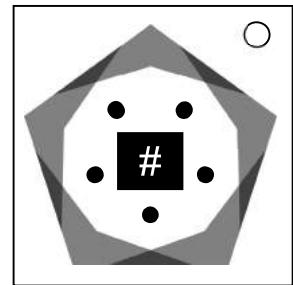
Stage 1: first flashing color

Stage 2: second flashing color

Stage 3: third flashing color

	red	orange	yellow	green	blue	purple
If three adjacent colors flashed in clockwise order	FFC	CEH	HAF	ECD	DDE	AHA
Otherwise, if a color flashed, then an adjacent color, then the first again	AHF	DFC	ECH	CDE	FEA	HAD
Otherwise, if at most one color flashed out of red, yellow, and blue	DED	ECF	FHE	HAA	AFH	CDC
Otherwise, if there are two colors opposite each other that didn't flash	HCE	ADA	CFD	DHH	EAC	FEF
Otherwise, if two adjacent colors flashed in clockwise order	CAH	FHD	DDA	AEC	HCF	EFE
Otherwise	EDA	HAE	AEC	FFF	CHD	DCH

On the Subject of Simon's Star

Simon has given up on doing stuff and started possessing stuff instead.

- The module consists of five coloured buttons and a cycling number.
- To disarm the module you must correctly input the response at each of the five stages in accordance with the table below.
- Each subsequent stage adds another colour to the sequence.
- At each stage, you must first press the buttons of the previous stages.
- The current sequence will repeat after a short delay until you press a button.
- Pressing a correct button will pause the sequence until you have correctly entered the whole response.
- Pressing an incorrect button will cause a strike and restart the current sequence.

- In the table, a '+' denotes a clockwise movement. A '−' denotes a counterclockwise movement. A '#' symbol denotes the displayed number.

|	
Stage 1	- If red flashed, press <u>green + 2</u>. - Otherwise, if blue flashed, press <u>yellow − #</u>. - Otherwise, if yellow flashed, press <u>purple + #</u>. - Otherwise, if green flashed, press <u>red − 1</u>. - Otherwise, press <u>blue − 2</u>.
Stage 2	- If green flashed and the colour that flashed at stage 1 was not purple or red, press <u>blue − #</u>. - Otherwise, if red flashed and the colour that was pressed at stage 1 was not green or blue, press <u>yellow + 3</u>. - Otherwise, if blue flashed and the colour that was pressed at stage 1 was purple or yellow, press green. - Otherwise, if yellow flashed and the colour that flashed at stage 1 was not red, press <u>red − 2</u>. - Otherwise, if purple flashed and the colour that flashed at stage 1 was green or red, press <u>purple + #</u>. - Otherwise, press the colour that flashed at stage 1.

Stage 3	• If three unique colours have flashed, press <u>yellow - #</u>. • Otherwise, if two unique colours have been pressed, press <u>blue + 2</u>. • Otherwise, if neither green or purple have been pressed, press <u>red + #</u>. • Otherwise, if blue or red flashed, press <u>purple - 1</u>. • Otherwise, press the colour that was pressed at stage 1.
Stage 4	• If the colour that flashed at <u>stage 3 + #</u> has been pressed, press the colour that was pressed at stage 2. • Otherwise, if the colour that flashed at <u>stage 4 - 2</u> has not been pressed, press the colour that flashed at <u>stage 3 - #</u>. • Otherwise, if the colour that was pressed at <u>stage 2 - #</u> has flashed, press the colour that flashed at stage 1. • Otherwise, if the colour that was pressed at <u>stage 1 + 2</u> has not been pressed, press the colour that was pressed at <u>stage 3 + #</u>. • Otherwise, press the colour that flashed at stage 2.
Stage 5	• If all five colours have flashed, press green. • Otherwise, if purple has not been pressed, press red. • Otherwise, if yellow has not flashed, press blue. • Otherwise, if <u>red - #</u> has not been pressed, press purple. • Otherwise, if <u>blue + #</u> has not flashed, press yellow. • Otherwise, if green has flashed and been pressed, press <u>red + #</u>. • Otherwise, press <u>blue - #</u>.

- Once you have passed a stage, the pass light will indicate what the central digit was at that stage, with stage 1 being the southern light and subsequent pass lights being read clockwise.

Colour	Digit
Blue	0
Green	1
Purple	2
Red	3
Yellow	4

On the Subject of Colored Squares

*There is order in chaos. A pattern in the colors. Find it, and all will become clear.*

- Press all squares in the correct group to progress the module.
- Pressing a square will cause it to light up white. Light all squares to disarm the module.
- To begin, press the color group containing the fewest squares. If there is a tie, you are looking at a different module.
- Then use the table to determine the next group to press in each stage.
- "Group" refers to all squares of a particular color, or all unlit squares in the topmost row or leftmost column containing unlit squares.
- Pressing an incorrect square will result in a strike and reset the module.
- Lit squares will remain lit for the duration of the module, but unlit squares may change color in each stage.
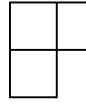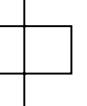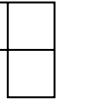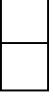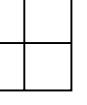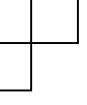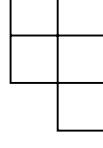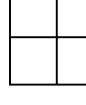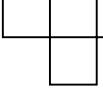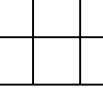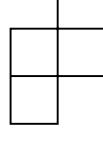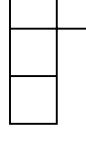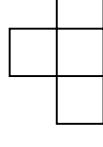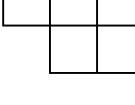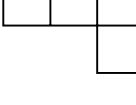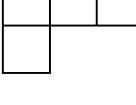
Currently Lit Squares	Previous Group of Squares Pressed						
	Red	**Blue**	**Green**	**Yellow**	**Magenta**	**Row**	**Column**
1	Blue	Column	Red	Yellow	Row	Green	Magenta
2	Row	Green	Blue	Magenta	Red	Column	Yellow
3	Yellow	Magenta	Green	Row	Blue	Red	Column
4	Blue	Green	Yellow	Column	Red	Row	Magenta
5	Yellow	Row	Blue	Magenta	Column	Red	Green
6	Magenta	Red	Yellow	Green	Column	Blue	Row
7	Green	Row	Column	Blue	Magenta	Yellow	Red
8	Magenta	Red	Green	Blue	Yellow	Column	Row
9	Column	Yellow	Red	Green	Row	Magenta	Blue
10	Green	Column	Row	Red	Magenta	Blue	Yellow
11	Red	Yellow	Row	Column	Green	Magenta	Blue
12	Column	Blue	Magenta	Red	Yellow	Row	Green
13	Row	Magenta	Column	Yellow	Blue	Green	Red
14	Red	Blue	Magenta	Row	Green	Yellow	Column
15	Column	Row	Column	Row	Column	Row	Column

On the Subject of Uncolored Squares

There is order in chaos. A pattern in the colors. Find it, and all will become clear.

- Press squares in specific patterns to progress the module.
- At each stage, find the two colors that occur fewer times than any other colors. If there is no such two-way tie at the start, you are looking at a different module.
- Using those two colors, determine the pattern to press below. Press any set of lit squares in that pattern.
- Once completed, the squares making up the pattern become unlit and the next stage is generated. Repeat this process until the module is disarmed.
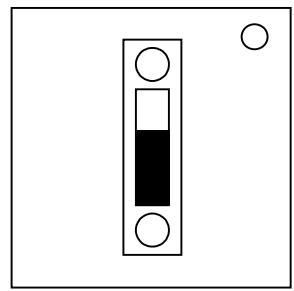
Other color ↓	First color in reading order				
	Red	**Green**	**Blue**	**Yellow**	**Magenta**
Red		(shape)	(shape)	(shape)	(shape)
Green	(shape)		(shape)	(shape)	(shape)
Blue	(shape)	(shape)		(shape)	(shape)
Yellow	(shape)	(shape)	(shape)		(shape)
Magenta	(shape)	(shape)	(shape)	(shape)	

On the Subject of The Switch

This bomb is doing a major "Flip You," so why not flip it back?

This module will have a switch and 2 LEDs, 1 above and 1 below the switch. To solve the module, flip the switch at the correct time twice. Upon flipping the switch, the LEDs will change.

Use the rules below to figure out when to flip the switch up and when to flip the switch down. Flipping the switch at an incorrect time will register a strike.

If the switch is down:

1. If the top LED is red or the bottom LED is blue, flip the switch when either of the seconds digits of the timer is a 5.
2. Otherwise, if the top LED is green or yellow and the last digit of the serial number is even, flip the switch when either of the seconds digits of the timer is a 3.
3. Otherwise, if the bottom LED is green or yellow and the last digit of the serial number is odd, flip the switch when either of the seconds digits of the timer is a 6.
4. Otherwise, if both LEDs are the same color, flip the switch when either of the seconds digits of the timer is a 0.
5. Otherwise, flip the switch when either of the seconds digits of the timer is a 9.
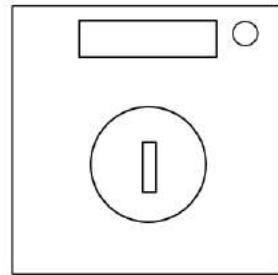
If the switch is up:

1. If either LED is purple and there is an RJ-45 port, flip the switch when either of the seconds digits of the timer is a 1.
2. Otherwise, if either LED is orange, flip the switch when either of the seconds digits of the timer is a 4.
3. Otherwise, if the bottom LED is red or yellow, flip the switch when either of the seconds digits of the timer is a 7.
4. Otherwise, if there is two or more batteries and a unlit TRN indicator, flip the switch when either of the seconds digits of the timer is a 8.
5. Otherwise, flip the switch when either of the seconds digits of the timer is a 2.

On the Subject of Turn The Key

*How can something so simple be so infuriating?*
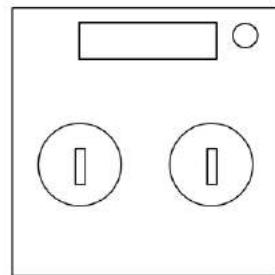
Turn the key when the bomb's timer matches the time on the display, no sooner, no later.

On the Subject of Turn The Keys

Order is everything.

This modules has two keys and a display. The display indicates this module's priority.

LEFT KEY

Turn the left key after you have done <u>all</u> of the following:

- Turned the right key on all 'Turn the Keys' modules.
- Turned all lower priority left keys.
- Solved all Password modules.
- Solved all Who's On First modules.
- Solved all Crazy Talk modules.
- Solved all Keypad modules.
- Solved all Listening modules.
- Solved all Orientation modules.

But before you have done <u>any</u> of the following:

- Turned any higher priority left keys.
- Solved any Maze modules.
- Solved any Memory modules.
- Solved any Complex Wires modules.
- Solved any Wire Sequence modules.
- Solved any Cryptography modules.

RIGHT KEY

Turn the right key after you have done <u>all</u> of the following:

- Turned all higher priority right keys.
- Solved all Morse Code modules.
- Solved all Wire modules.
- Solved all Two Bits modules.
- Solved all The Button modules.
- Solved all Colour Flash modules.
- Solved all Round Keypad modules.
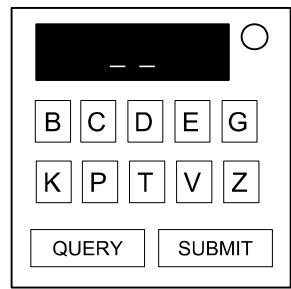
But before you have done <u>any</u> of the following:

- Turned any left keys.
- Turned any lower priority right keys.
- Solved any Semaphore modules.
- Solved any Combination Lock modules.
- Solved any Simon Says modules.
- Solved any Astrology modules.
- Solved any Switches modules.
- Solved any Plumbing modules.

On the Subject of Two Bits

This poorly programmed lookup device is as maddening with its slow responses as it is unforgiving with ill-timed inputs. Patience required.

Query a series of two-letter codes to track down the correct answer before submitting it. This primitive lookup machine is intolerant to incomplete and excessive inputs, as well as any input while it is busy.

Step 1: Determine Initial Code

If the serial number contains a letter, use the leftmost letter's numeric position in the alphabet as your base value (e.g. A=1, B=2). For no letters, use 0.

Add the last digit of the serial number multiplied by the number of batteries present.

If there is a Stereo RCA port present, double the current value.[*]

This value[**] is now the current code.

[*] Note: Skip this step if there is also an RJ45 port present.
[**] Note: Use the last two digits if the value is greater than 99. Prepend with a zero if less than 10.

Step 2: Determine character pair and Perform Query

Using the current code, look up the character pair. Enter that pair into the device and press "Query".

|	-0	-1	-2	-3	-4	-5	-6	-7	-8	-9
0-	kb	dk	gv	tk	pv	kp	bv	vt	pz	dt
1-	ee	zk	ke	ck	zp	pp	tp	tg	pd	pt
2-	tz	eb	ec	cc	cz	zv	cv	gc	bt	gt
3-	bz	pk	kz	kg	vd	ce	vb	kd	gg	dg
4-	pb	vv	ge	kv	dz	pe	db	cd	td	cb
5-	gb	tv	kk	bg	bp	vp	ep	tt	ed	zg
6-	de	dd	ev	te	zd	bb	pc	bd	kc	zb
7-	eg	bc	tc	ze	zc	gp	et	vc	tb	vz
8-	ez	ek	dv	cg	ve	dp	bk	pg	gk	gz
9-	kt	ct	zz	vg	gd	cp	be	zt	vk	dc

Step 3: Repeat and Submit
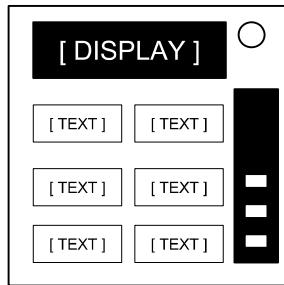
The response code from the device from the query in Step 2 is now your current code. Perform Step 2 an additional 2 times, using the new code each time.

After receiving the response code from the final query, look up the corresponding character pair, enter the pair into the device and press "Submit".

On the Subject of Who's on First

[DISPLAY] ○

[TEXT]   [TEXT]

[TEXT]   [TEXT]

[TEXT]   [TEXT]
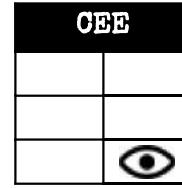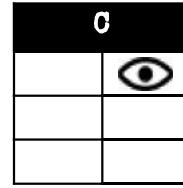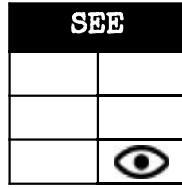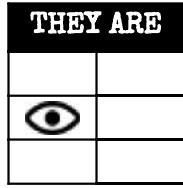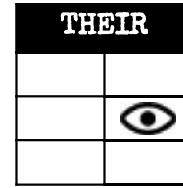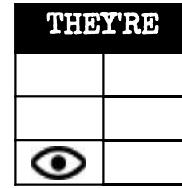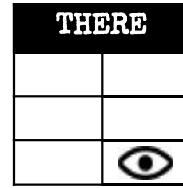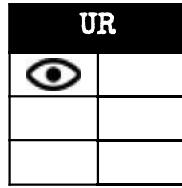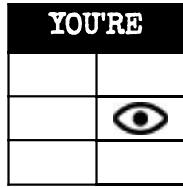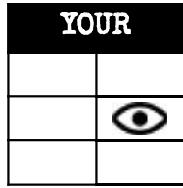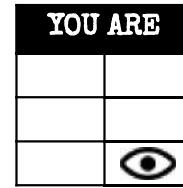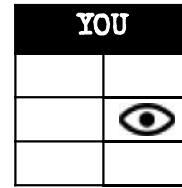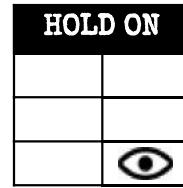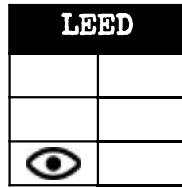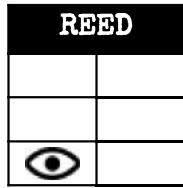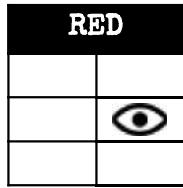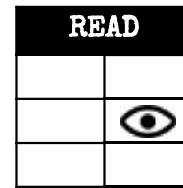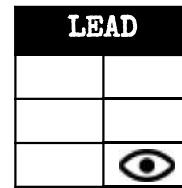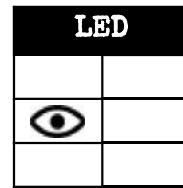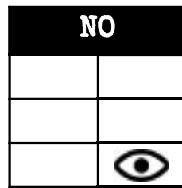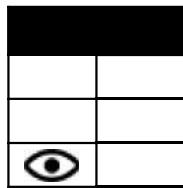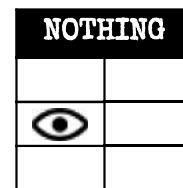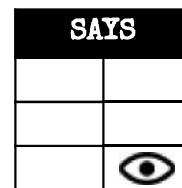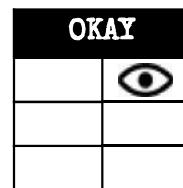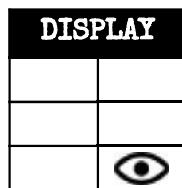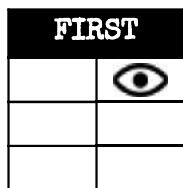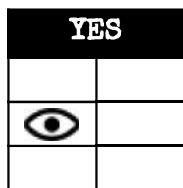
This contraption is like something out of a sketch comedy routine, which might be funny if it wasn't connected to a bomb. I'll keep this brief, as words only complicate matters.

1. Read the display and use step 1 to determine which button label to <u>read</u>.
2. Using this button label, use step 2 determine which button to <u>push</u>.
3. Repeat until the module has been disarmed.

Step 1:

Based on the display, <u>read</u> the label of a particular button and proceed to step 2:

YES
●	

FIRST
	●

DISPLAY
	●

OKAY
	●

SAYS
	●

NOTHING
●	

(blank)
●	

BLANK
	●

NO
	●

LED
●	

LEAD
	●

READ
	●

RED
	●

REED
●	

LEED
●	

HOLD ON
	●

YOU
	●

YOU ARE
	●

YOUR
	●

YOU'RE
	●

UR
●	

THERE
	●

THEY'RE
●	

THEIR
	●

THEY ARE
●	

SEE
	●

C
	●

CEE
	●

Step 2:
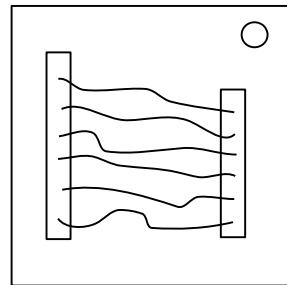
Using the label from step 1, push the first button that appears in its corresponding list:

"READY":	YES, OKAY, WHAT, MIDDLE, LEFT, PRESS, RIGHT, BLANK, READY, NO, FIRST, UHHH, NOTHING, WAIT
"FIRST":	LEFT, OKAY, YES, MIDDLE, NO, RIGHT, NOTHING, UHHH, WAIT, READY, BLANK, WHAT, PRESS, FIRST
"NO":	BLANK, UHHH, WAIT, FIRST, WHAT, READY, RIGHT, YES, NOTHING, LEFT, PRESS, OKAY, NO, MIDDLE
"BLANK":	WAIT, RIGHT, OKAY, MIDDLE, BLANK, PRESS, READY, NOTHING, NO, WHAT, LEFT, UHHH, YES, FIRST
"NOTHING":	UHHH, RIGHT, OKAY, MIDDLE, YES, BLANK, NO, PRESS, LEFT, WHAT, WAIT, FIRST, NOTHING, READY
"YES":	OKAY, RIGHT, UHHH, MIDDLE, FIRST, WHAT, PRESS, READY, NOTHING, YES, LEFT, BLANK, NO, WAIT
"WHAT":	UHHH, WHAT, LEFT, NOTHING, READY, BLANK, MIDDLE, NO, OKAY, FIRST, WAIT, YES, PRESS, RIGHT
"UHHH":	READY, NOTHING, LEFT, WHAT, OKAY, YES, RIGHT, NO, PRESS, BLANK, UHHH, MIDDLE, WAIT, FIRST
"LEFT":	RIGHT, LEFT, FIRST, NO, MIDDLE, YES, BLANK, WHAT, UHHH, WAIT, PRESS, READY, OKAY, NOTHING
"RIGHT":	YES, NOTHING, READY, PRESS, NO, WAIT, WHAT, RIGHT, MIDDLE, LEFT, UHHH, BLANK, OKAY, FIRST
"MIDDLE":	BLANK, READY, OKAY, WHAT, NOTHING, PRESS, NO, WAIT, LEFT, MIDDLE, RIGHT, FIRST, UHHH, YES
"OKAY":	MIDDLE, NO, FIRST, YES, UHHH, NOTHING, WAIT, OKAY, LEFT, READY, BLANK, PRESS, WHAT, RIGHT
"WAIT":	UHHH, NO, BLANK, OKAY, YES, LEFT, FIRST, PRESS, WHAT, WAIT, NOTHING, READY, RIGHT, MIDDLE
"PRESS":	RIGHT, MIDDLE, YES, READY, PRESS, OKAY, NOTHING, UHHH, BLANK, LEFT, FIRST, WHAT, NO, WAIT
"YOU":	SURE, YOU ARE, YOUR, YOU'RE, NEXT, UH HUH, UR, HOLD, WHAT?, YOU, UH UH, LIKE, DONE, U
"YOU ARE":	YOUR, NEXT, LIKE, UH HUH, WHAT?, DONE, UH UH, HOLD, YOU, U, YOU'RE, SURE, UR, YOU ARE
"YOUR":	UH UH, YOU ARE, UH HUH, YOUR, NEXT, UR, SURE, U, YOU'RE, YOU, WHAT?, HOLD, LIKE, DONE
"YOU'RE":	YOU, YOU'RE, UR, NEXT, UH UH, YOU ARE, U, YOUR, WHAT?, UH HUH, SURE, DONE, LIKE, HOLD
"UR":	DONE, U, UR, UH HUH, WHAT?, SURE, YOUR, HOLD, YOU'RE, LIKE, NEXT, UH UH, YOU ARE, YOU
"U":	UH HUH, SURE, NEXT, WHAT?, YOU'RE, UR, UH UH, DONE, U, YOU, LIKE, HOLD, YOU ARE, YOUR
"UH HUH":	UH HUH, YOUR, YOU ARE, YOU, DONE, HOLD, UH UH, NEXT, SURE, LIKE, YOU'RE, UR, U, WHAT?
"UH UH":	UR, U, YOU ARE, YOU'RE, NEXT, UH UH, DONE, YOU, UH HUH, LIKE, YOUR, SURE, HOLD, WHAT?
"WHAT?":	YOU, HOLD, YOU'RE, YOUR, U, DONE, UH UH, LIKE, YOU ARE, UH HUH, UR, NEXT, WHAT?, SURE
"DONE":	SURE, UH HUH, NEXT, WHAT?, YOUR, UR, YOU'RE, HOLD, LIKE, YOU, U, YOU ARE, UH UH, DONE
"NEXT":	WHAT?, UH HUH, UH UH, YOUR, HOLD, SURE, NEXT, LIKE, DONE, YOU ARE, UR, YOU'RE, U, YOU
"HOLD":	YOU ARE, U, DONE, UH UH, YOU, UR, SURE, WHAT?, YOU'RE, NEXT, HOLD, UH HUH, YOUR, LIKE
"SURE":	YOU ARE, DONE, LIKE, YOU'RE, YOU, HOLD, UH HUH, UR, SURE, U, WHAT?, NEXT, YOUR, UH UH
"LIKE":	YOU'RE, NEXT, U, UR, HOLD, DONE, UH UH, WHAT?, UH HUH, YOU, LIKE, SURE, YOU ARE, YOUR

On the Subject of Wires

Wires are the lifeblood of electronics! Wait, no, electricity is the lifeblood. Wires are more like the arteries. The veins? No matter...

- A wire module can have 3-6 wires on it.
- Only the <u>one</u> correct wire needs to be cut to disarm the module.
- Wire ordering begins with the first on the top.

---

3 wires:

If there are no red wires, cut the second wire.

Otherwise, if the last wire is white, cut the last wire.

Otherwise, if there is more than one blue wire, cut the last blue wire.

Otherwise, cut the last wire.

---

4 wires:

If there is more than one red wire and the last digit of the serial number is odd, cut the last red wire.

Otherwise, if the last wire is yellow and there are no red wires, cut the first wire.

Otherwise, if there is exactly one blue wire, cut the first wire.

Otherwise, if there is more than one yellow wire, cut the last wire.

Otherwise, cut the second wire.

---

5 wires:

If the last wire is black and the last digit of the serial number is odd, cut the fourth wire.

Otherwise, if there is exactly one red wire and there is more than one yellow wire, cut the first wire.

Otherwise, if there are no black wires, cut the second wire.

Otherwise, cut the first wire.

---

6 wires:

If there are no yellow wires and the last digit of the serial number is odd, cut the third wire.

Otherwise, if there is exactly one yellow wire and there is more than one white wire, cut the fourth wire.
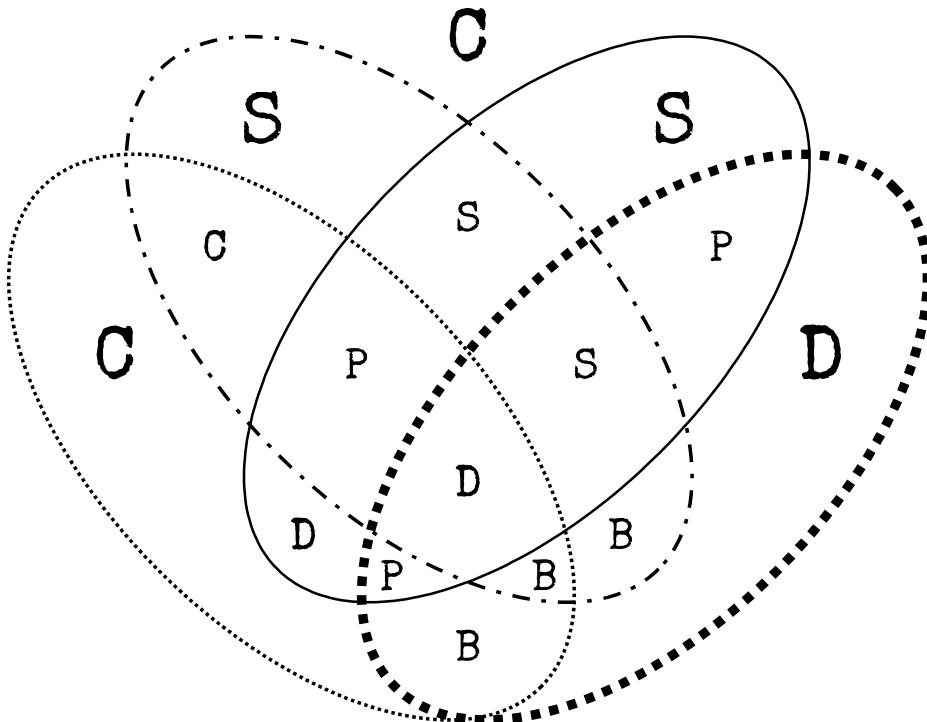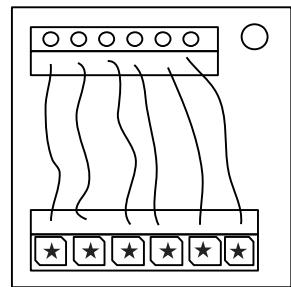
Otherwise, if there are no red wires, cut the last wire.

Otherwise, cut the fourth wire.

On the Subject of Complicated Wires

These wires aren't like the others. Some have stripes! That makes them completely different. The good news is that we've found a concise set of instructions on what to do about it! Maybe too concise...

- Look at each wire: there is an LED above the wire and a space for a "★" symbol below the wire.
- For **each** wire/LED/symbol combination, use the Venn diagram below to decide whether or not to cut the wire.
- Each wire may be striped with multiple colors.

	Legend
— · — · — ·	Wire has red coloring
————	Wire has blue coloring
··············	Has ★ symbol
■ ■ ■ ■ ■ ■	LED is on
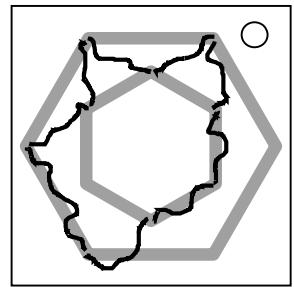
Letter	Instruction
C	Cut the wire
D	Do not cut the wire
S	Cut the wire if the last digit of the serial number is even
P	Cut the wire if the bomb has a parallel port
B	Cut the wire if the bomb has two or more batteries

See Appendix B for battery identification reference.
See Appendix C for port identification reference.

On the Subject of Follow the Leader

Child's play. Just follow the leader. Only if you fail to follow, the penalty is somewhat more explosive.

This module contains 8-12 wires connecting numerically labeled plugs in a looping sequence. Each wire leads from one plug to the next plug that contains a wire in ascending numerical order. A wire leading from plug 1 is considered to be "wire 1".

Progress through the module by first determining the starting wire, then checking whether to cut each wire in the sequence. Each wire will need to be either cut or left uncut based on the state of the previous wire(s) in the sequence.

Determine Start Position

Follow the first rule below that applies:

1. If an RJ-45 port is present and there is a wire leading from plug 4 <u>directly</u> to plug 5, begin at that wire.
2. Otherwise, if there is a wire that begins at a plug matching the number of batteries on the bomb, begin with that wire.
3. Otherwise, if there is a wire that begins at a plug matching the first numeral of the serial number, begin at that wire.
4. Otherwise, if there is a lit indicator with the label CLR, disregard all further instructions and cut all wires present on this module in descending numerical order.
5. If none of the above apply, the start position is the plug containing a wire earliest in numerical order.

Cutting Wires
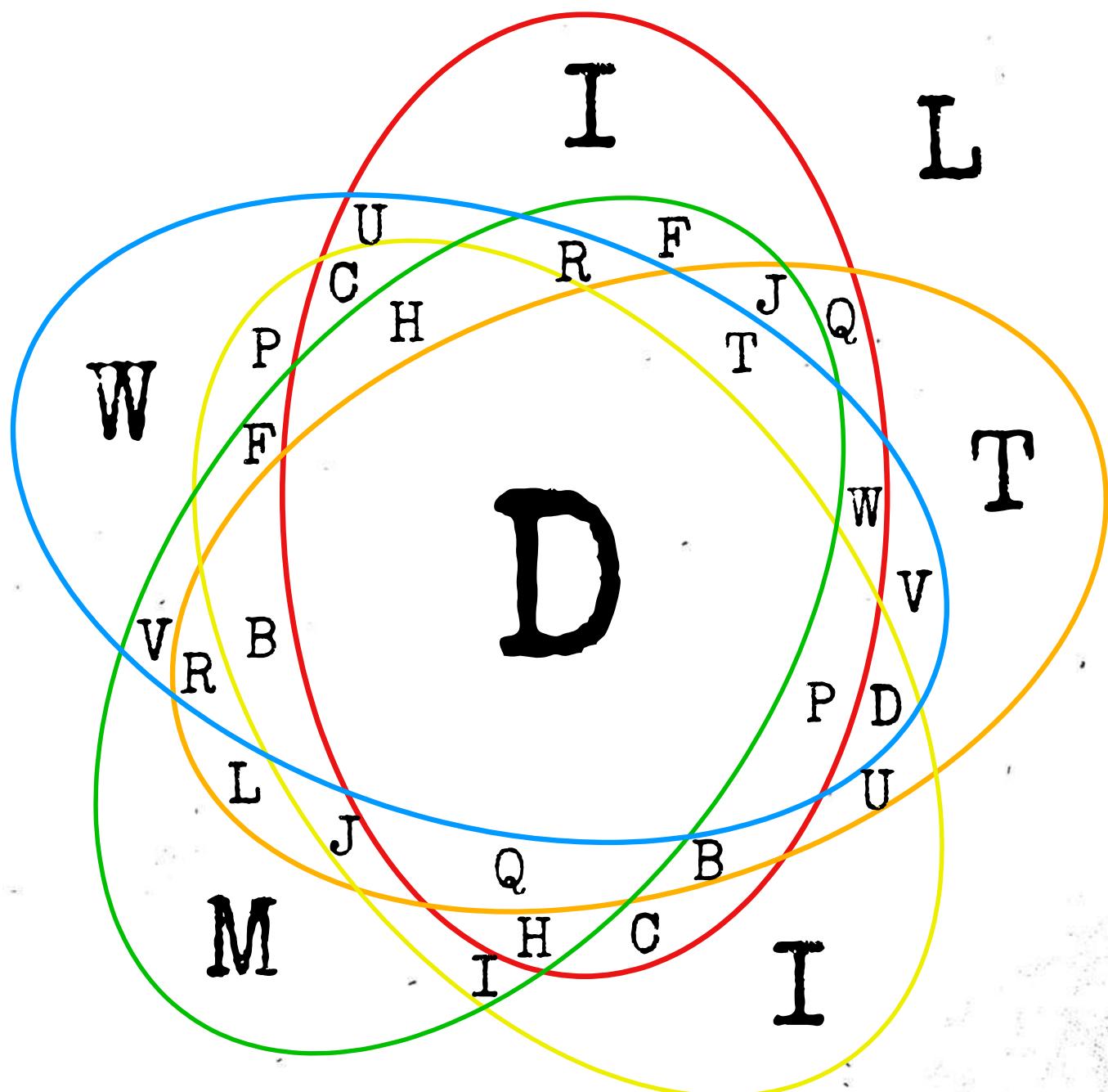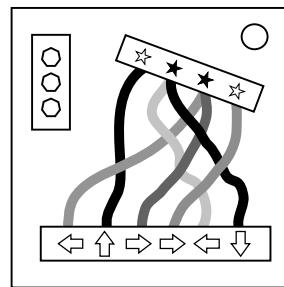
- <u>Always</u> cut the wire at the starting plug. Then progress to the next wire.
- From this position, cut the wires as directed by the steps in the following table. The starting step corresponds to the first letter in the serial number. If the serial number contains no letters, begin at step A.
- When progressing to the next wire, also progress to the next step alphabetically in the table to determine whether to cut the wire.
- "Previous wire(s)" may refer to wires beyond the original starting position in the sequence.
- If the wire at the starting plug is red, green, or white, progress through the steps in reverse alphabetical order instead.

Step	Cut this wire if:
A or N	The previous wire is not yellow or blue or green.
B or O	The previous wire leads to an even numbered plug.
C or P	The previous wire should be cut.
D or Q	The previous wire is red or blue or black.
E or R	Two of the previous three wires share a color.
F or S	Exactly one of the previous two wires is the same color as this wire.
G or T	The previous wire is yellow or white or green.
H or U	The previous wire should not be cut.
I or V	The previous wire skips a plug.
J or W	The previous wire is not white or black or red.
K or X	The previous two wires are different colors.
L or Y	The previous wire does not lead to a position labeled 6 or less.
M or Z	Exactly one or neither of the previous two wires are white or black.

On the Subject of Perplexing Wires

Complicated Wires just isn't complicated enough.

- Look at each wire: there is a "★" symbol above the wire and an arrow symbol below the wire, as well as three small LEDs on the side.
- For **each** wire, use the Venn diagram below to decide whether or not to cut the wire. The meanings of the colors and letters in the Venn diagram are described on the next page.

Red	Orange	Yellow	Green	Blue
The wire is red, yellow, blue, or white.	The wire shares the same color as its arrow.	The wire's star is black.	The wire's position on the bottom is even.	The wire crosses another wire.[1]
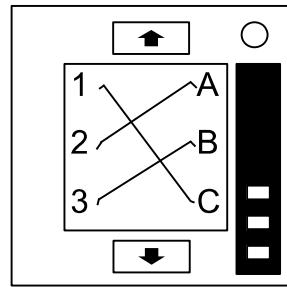
Letter	Instruction
C	Cut the wire.
F	Always cut the wire, but only cut it first.
L	Always cut the wire, but only cut it last.
W	Cut the wire if more of the LEDs are on than off.
T	Cut the wire if the top LED is on.
U	Cut the wire if its arrow points up or down.
M	Cut the wire if the arrow points down or right.
H	Cut the wire if the wire shares a star with another wire.
P	Cut the wire if its position at the bottom is equal to the number of ports.
B	Cut the wire if its position at the bottom is equal to the number of batteries.
I	Cut the wire if its position at the bottom is equal to the number of indicators.
Q	Cut the wire if the color of the wire is unique.
J	Cut the wire if, at the bottom, it is adjacent to an orange or purple wire.
V	Cut the wire if the serial number has a vowel, or if the bomb has a USB port.
R	Cut the wire if its arrow direction is unique.
D	Do not cut the wire.

---

[1] Specifically, two wires are considered "crossing" if their top connectors (near the stars) are in the opposite order from their bottom connectors (near the arrows).

On the Subject of Wire Sequences

It's hard to say how this mechanism works. The engineering is pretty impressive, but there must have been an easier way to manage nine wires.

- Within this module there are several panels with wires on them, but only one panel is visible at a time. Switch to the next panel by using the down button and the previous panel by using the up button.
- Do not switch to the next panel until you are sure that you have cut all necessary wires on the current panel.
- Cut the wires as directed by the following table. Wire occurrences are cumulative over all panels within the module.
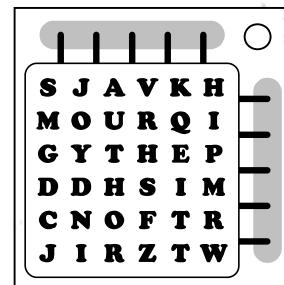
Red Wire Occurrences		Blue Wire Occurrences		Black Wire Occurrences	
Wire Occurrence	**Cut if connected to:**	**Wire Occurrence**	**Cut if connected to:**	**Wire Occurrence**	**Cut if connected to:**
First red occurrence	C	First blue occurrence	B	First black occurrence	A, B or C
Second red occurrence	B	Second blue occurrence	A or C	Second black occurrence	A or C
Third red occurrence	A	Third blue occurrence	B	Third black occurrence	B
Fourth red occurrence	A or C	Fourth blue occurrence	A	Fourth black occurrence	A or C
Fifth red occurrence	B	Fifth blue occurrence	B	Fifth black occurrence	B
Sixth red occurrence	A or C	Sixth blue occurrence	B or C	Sixth black occurrence	B or C
Seventh red occurrence	A, B or C	Seventh blue occurrence	C	Seventh black occurrence	A or B
Eighth red occurrence	A or B	Eighth blue occurrence	A or C	Eighth black occurrence	C
Ninth red occurrence	B	Ninth blue occurrence	A	Ninth black occurrence	C

On the Subject of Word Search

LZIEAJDHARDERBNCOJWTHANPQIEYBZITLOOKSYWH

A field of 36 letters will appear on the screen within the module. Some of these letters will spell out words, which may be spelled backwards and appear in any direction.

1. The chart below contains boxes with letters in the corners. For each of the four letters in the corners of the display, find a box on the chart that has that letter in the same corner.
2. Once all the relevant boxes have been located, use the last digit of the serial number (even or odd) to determine the correct words to reference.
3. Only one of those words will appear on the display. Select the first and last letter of the correct word to disarm the module. The bomb will record a strike if any other words are selected.

```
S J A V K H
M O U R Q I
G Y T H E P
D D H S I M
C N O F T R
J I R Z T W
```

[even]	HOTEL	SEARCH	ADD	SIERRA	FINISH
—	—	—	—	—	—
[odd]	DONE	QUEBEC	CHECK	FIND	EAST

V — U — S — Z

PORT	BOOM	LINE	KABOOM	PANIC	MANUAL	DECOY
—	—	—	—	—	—	—
COLOR	SUBMIT	BLUE	ECHO	FALSE	ALARM	CALL

P — Q — N — X — F — Y

SEE	INDIA	NUMBER	ZULU	VICTOR	DELTA	HELP
—	—	—	—	—	—	—
TWENTY	NORTH	LOOK	GREEN	XRAY	YES	LOCATE

T — I — M — E — D — A

ROMEO	TRUE	MIKE	FOUND	BOMBS	WORK	TEST
—	—	—	—	—	—	—
BEEP	EXPERT	EDGE	RED	WORD	UNIQUE	JINX

K — B — W — H — J — O

GOLF	TALK	BRAVO	SEVEN	MODULE	LIST	YANKEE
—	—	—	—	—	—	—
LETTER	SIX	SERIAL	TIMER	SPELL	TANGO	SOLVE

R — L — C — G

CHART	MATH	READ	LIMA	COUNT
—	—	—	—	—
OSCAR	NEXT	LISTEN	FOUR	OFFICE

Section 2: Needy Modules

Needy modules cannot be disarmed, but pose a recurrent hazard.

Needy modules can be identified as a module with a small 2-digit timer in the top center. Interacting with the bomb may cause them to become activated. Once activated, these needy modules must be tended to regularly before their timer expires in order to prevent a strike.
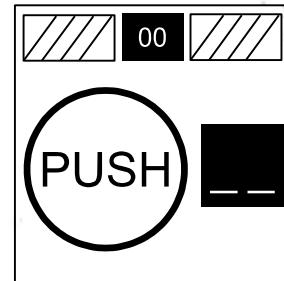
Stay observant: needy modules may reactivate at any time.

On the Subject of Button Masher

Just don't break the button, speed runners should know how it feels.
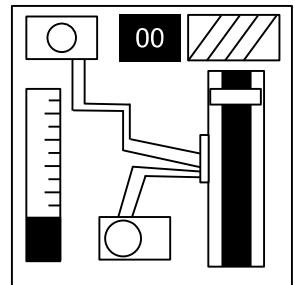
- This needy module contains a button and a display.
- Upon activation, the needy will display a number between 25 and 45.
- You must press the button as many times as it says in the display in 20 seconds, or a strike will be recorded.
- If you press the button more than what the display intends, a strike will be recorded.

On the Subject of Capacitor Discharge

I'm going to guess that this is just meant to occupy your attention, because otherwise this is some shoddy electronics work.
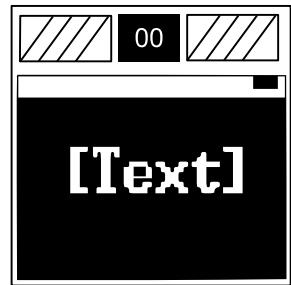
- Discharge the capacitor before it overloads by holding down the lever.

On the Subject of Command Prompts

Who thought that installing some old Vista technology on a bomb was a good idea...

- This module consists of a display and 2 buttons.
- When the module activates, the display will show a command, a file and an extension.
- Look in the diagram below to find which button must be pressed.
- If a wrong response was given, the code from the file will hand over a strike.
- Successfully disarm this needy by responding with the right Response Button.
- Some combinations have exceptions. Refer to Section B of the manual for more information.

Section A: Combination Diagram.

	AutoExec	ManualDet	RunIndc	BtnMasher	FileNotFond
Execute	Y	N	E4	N	Y
Open	E2	N	Y	E3	N
Run	E1	Y	E4	N	N
Abort	E3	N	Y	E2	Y
Terminate	Y	E4	N	Y	N
Stop	E2	Y	E3	N	Y

Section B: Exceptions.

Exception 1: If the extension is exe or cmd, press Y.
Exception 2: If the extension is dll or sys, press Y.
Exception 3: If the extension is bat or exe, press N.
Exception 4: If there is a vowel in the serial, press N.

On the Subject of Determinants

What even is a determinant? Something from linear algebra? The Algebra II section on matrices didn't explain well.
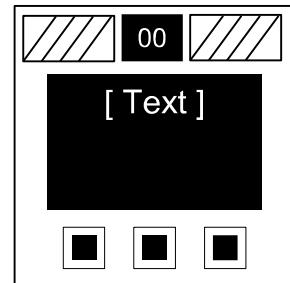
- The module will display a 2×2 matrix of four numbers.
- Enter the determinant of the matrix by using the keypad and pressing the submit button.
- The determinant of a 2×2 matrix is ad−bc.

On the Subject of Edgework

You would think that the ports on the side of the bomb are used for something other than just for answering questions...
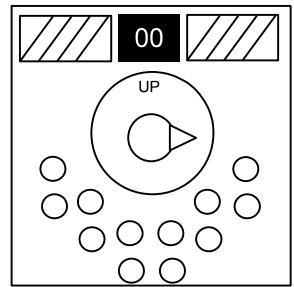
- Respond to the computer prompts by pressing the button corresponding to the answer of the question on the main display.
- There are five questions asked every time the module activates.

On the Subject of Knobs

Needlessly complicated and endlessly needy. Imagine if such expertise were used to make something other than diabolical puzzles.

- The knob can be turned to one of four different positions.
- The knob must be in the correct position when this module's timer hits zero.
- The correct position can be determined by the on/off configuration of the twelve LEDs.
- Knob positions are relative to the "UP" label, which may be rotated.

LED Configurations

Up Position:

		X		X	X
X	X	X	X		X

X		X		X	
	X	X		X	X

Down Position:

	X	X			X
X	X	X	X		X

X		X		X	
	X				X

Left Position:

				X	
X			X	X	X

				X	
			X	X	

Right Position:

X		X	X	X	X
X	X	X		X	
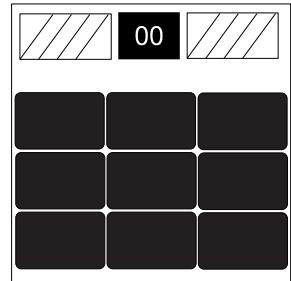
X		X	X		
X	X	X		X	

X = Lit LED

On the Subject of Lights Out

Who knew turning out all the lights was a hard task?
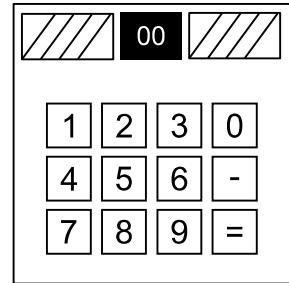
- Press the buttons to switch off all the lights.
- When pressed, a button will invert the lit state of the button itself and the lit state of the adjacent buttons in the four major cardinal directions.

On the Subject of Math

Math is still easy. But is it easy when you have to answer questions over and over to stop an explosion? Only one way to find out.
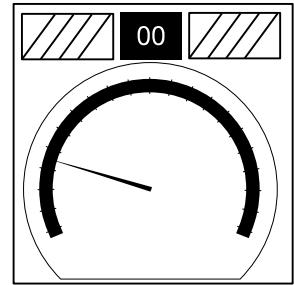
Answer the question. Enter the numbers with the keypad and press '=' to submit your answer. Use '-' to toggle the sign. Don't blow up!

On the Subject of Motion Sense

Don't move. Its explosiveness is based on movement.
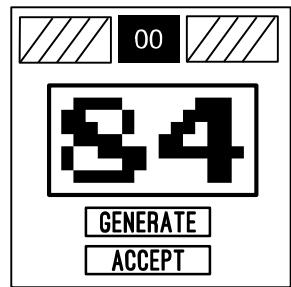
- When activated, this module will monitor all rotation activity of the bomb for the duration of the module activation.
- The more you rotate the bomb while active, the higher the needle will rise on the indicator.
- A strike is given if the needle on the gauge reaches the end of the scale.
- The back-light of the gauge will change color and an audible sound will be made when the gauge reaches 80% or more.
- Setting the bomb down, or conversely picking the bomb up, will cause rotation activity and will cause the needle to rise when the module is active.

On the Subject of Random Number Generator

We are now at the mercy of RNGesus.

- When the module activates, there will be two tildes (~) on the display.
- Hit "Generate" to generate random numbers until you come across a number that matches the rules that apply.
- Once you find a number that applies, hit "Accept."

If the last digit of the serial number is...

Odd: The number must be odd.

Even: The number must be even.

If a vowel in the serial number is...
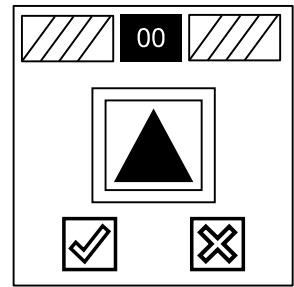
Present: The number must be in between 0 – 49.

Absent: The number must be in between 50 – 99.

On the Subject of Shape Memory
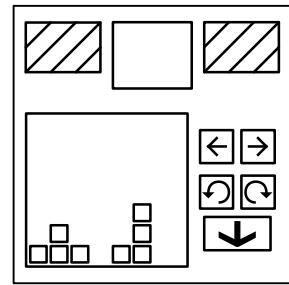
Oh look! It's that game that everyone knows of but nobody knows the name of!

- The module has a screen that will display either a circle, a square, or a triagle.
- The screen will display a shape before the module activates, so check it right away.
- There are also two buttons beneath the screen.

  - One button is green and has a checkmark on it. Press it if the shape that is currently being displayed is the same shape as the one that was previously displayed.
  - The other is red and has an X on it. Press it if the shape that is currently being displayed is different as the one that was previously displayed.

- A correct button press will add 15 seconds to the timer, with a maximum of 99 seconds.
- An incorrect button press will record a strike and temporarily disable the module.
- Running out of time will also record a strike and temporarily disable the module.

On the Subject of Tetris

Chances are you've already played many iterations of this game. At this point, how can we be sure that Tetris isn't some kind of meta-virus that propagates itself through game developers and modders?
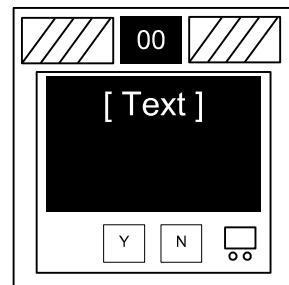
- To deactivate the module, the player will be required to place 3 Tetris pieces onto the game board.

- Pieces can be rotated, moved left and right, and placed using the arrow buttons.

- Pieces will not fall with time, but instead will be placed as far down as possible.

- Completely filling a row will cause that row to be removed, and other rows will fall down to fill the empty space.

- If the board fills up, the player will be unable to place new blocks, and will gain strikes.

On the Subject of Venting Gas

Computer hacking is hard work! Well, it usually is. This job could probably be performed by a simple drinking bird pressing the same key over and over again.

- Respond to the computer prompts by pressing "Y" for "Yes" or "N" for "No".

Appendix A: Indicator Identification Reference

Labelled indicator lights can be found on the sides of the bomb casing.
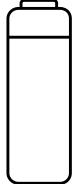
Common Indicators

- SND
- CLR
- CAR
- IND
- FRQ
- SIG
- NSA
- MSA
- TRN
- BOB
- FRK
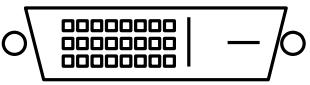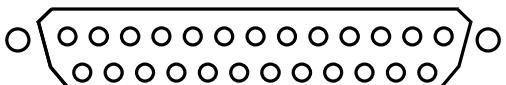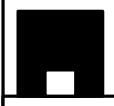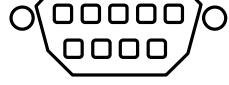
Appendix B: Battery Identification Reference

Common battery types can be found within enclosures on the sides of the bomb casing.

Battery	Type
	AA
	D

Appendix C: Port Identification Reference

Digital and analog ports can be found on sides of the bomb casing.

Port	Name
	DVI-D
	Parallel
	PS/2
	RJ-45
	Serial
	Stereo RCA

Appendix: Grammar

for use with the English Test module

This appendix contains a brief overview of some grammatical distinctions used in the English Test module and Needy English Test module.

The **subject** is what is doing the action, and the **object** is what is receiving the action. e.g. In "I buy milk." I is the subject and <u>milk</u> is the object.

their: belonging to them; **there:** that place; **they're:** they are
your: belonging to you; **you're:** you are
I, he, she, we, they: used in subjects; **me, him, her, us, them:** used in objects
less: used with uncountable nouns; **fewer:** used with countable nouns
who: used in subjects; **whom:** used in objects
defiantly: rebelliously; **definitely:** without doubt
lead: the metal or the present tense; **led:** the past tense and past participle
cite: declare a quoted source; **site:** location; **sight:** a view or vision
When you don't **lay** something else down, you **lie** down. The past tense of <u>lay</u> is **laid**. Confusingly, the past tense of <u>lie</u> is **lay**!
Literally means <u>word for word</u>. If you had "literally died" watching a video, your family and friends would be crying at your funeral about now.
If you write "should **of**", "could **of**", "would **of**", or "might **of**", no educated gentleman will take you seriously. Remember, "I <u>do</u>" is to "I <u>have done</u>" as "I could <u>do</u>" is to "I could <u>have done</u>". (Exceptions apply, but very <u>very</u> rarely!)
its: belonging to it; **it's:** it is
capital: main city in a territory, money you put up to borrow something, or THIS KIND OF LETTER; **capitol:** big building, usually in a <u>capital</u>
affect: usually a verb, but noun when it means "display of emotion"; **effect:** almost always a noun; **impact:** physical force
i.e.: short for Latin *id est*, or "that is"; **e.g.:** short for Latin *exemplī grātiā*, or "for example"
peak: summit; **peek:** sneak a look; **pique:** excite (usually interest)
allot: partition; **a lot:** very much; **alot:** (never correct)
lose: opposite of gain; **loose:** opposite of tight
than: (used to compare two things); **then:** at the time, or right after that
complement: when two parts complete each other; **compliment:** You look good today!
farther: physical distance; **further:** figurative distance
number: used for countable nouns; **amount:** used for uncountable nouns

Appendix: Grammar (Cont'd)

to: used in infinitives or destination; **too:** as well, or overly; **two:** 2
accept: This is fine; **except:** One of these things is not like the others
threw: past tense of "throw"; **through:** in at one side/end and out at the other
defuse: stop a bomb; **diffuse:** light softening out. Use "defuse" for tension.
statue: monument; **stature:** body height; **statute:** code of law
stationary: completely still; **stationery:** writing utensils
by: beside, from the mind of, etc.; **buy:** trade money for goods; **bye:** see you later
breath: the noun; **breathe:** the verb
drink: present tense; **drank:** past tense; **drunk:** past participle and adjective
discreet: secret or carefully subtle; **discrete:** separate
seas: plural of sea; **sees:** a form of "to see"; **seize:** to grab or take by force; **C's:** more than one C
weather: condition of the outside air; **whether:** if it is or if it isn't
raise: to make something go up; **rays:** narrow beams of light; **raze:** get rid of hair with a razor, or similarly destroy a wide area
wander: frolic; **wonder:** ponder
die: stop living, or a small cube for randomness; **dice:** more than one die
meat: flesh; **meet:** to see someone else; **mete:** to deal out something unpleasant
palate: roof of your mouth; **palette:** board to mix paint on, or a combination of colors; **pallet:** plates that cargo gets placed on
In this module, **racket:** a loud noise; **racquet:** a netted stick or paddle with which to hit a ball. (Especially in US English, racket can be used for both senses.)
perfect: 100% good or correct; **prefect:** person in a position of power, like an official or a heir

Other pairs/sets of words include: ad/add, aloud/allowed, altar/alter, arc/ark, baited/bated, base/bass, blew/blue, brake/break, carat/caret/carrot/karat, ceiling/sealing, cent/scent/sent, cereal/serial, choral/coral/corral, coarse/course, creak/creek, dear/deer, discussed/disgust, elicit/illicit, everyday/every day, faint/feint, faze/phase, find/fined, flair/flare, flea/flee, gait/gate, idle/idol/idyll, lighting/lightning/lightening, loan/lone/lend, oar/or/ore, pail/pale, pair/pare/pear, poor/pore/pour, praise/prays/preys, precedence/precedents/presidents, right/rite/wright/write, road/rode/rowed, ring/wring, role/roll, seam/seem, stairs/stares, steal/steel, straight/strait, though/thought/through/thorough, vain/vane/vein, vary/very, wait/weight, and weak/week.
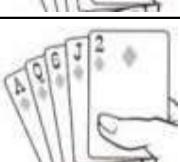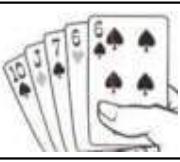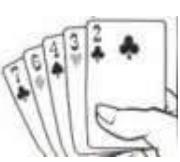
For lack of space, the differences for these words have been omitted, but they should be fairly common knowledge to most English speakers.

Appendix of Holidays

- **April Fools'** is celebrated every year on _April 1st_ by playing practical jokes and spreading hoaxes. The jokes and their victims are called April fools.
- **Australia Day** is the official National Day of Australia. Celebrated annually on _January 26th_, it marks the anniversary of the 1788 arrival of the First Fleet of British ships.
- **Bastille Day** is the common name given in English-speaking countries/lands to the French National Day, which is celebrated on the _14th of July_ each year.
- **Christmas Eve** is the evening or entire day before Christmas Day, the festival commemorating the birth of Jesus of Nazareth. It is celebrated on _December 24th_.
- **Cinco de Mayo** is an annual celebration held on _May 5th_. The date is observed to commemorate the Mexican Army's unlikely victory over the French Empire at the Battle of Puebla.
- The **Day of German Unity** is the national day of Germany, celebrated on _October 3rd_ as a public holiday.
- The **Day of the Dead** is a Mexican holiday celebrated throughout Mexico, in particular the Central and South regions, and by people of Mexican ancestry living in other places. It is on _October 31st_.
- **Earth Day** is an annual event celebrated on _April 22nd_. Worldwide, various events are held to demonstrate support for environmental protection.
- **Epiphany,** also Theophany or Three Kings' Day, is a Christian feast day on _January 6th_, that celebrates the revelation of God incarnate as Jesus Christ.
- **Golden Week** is a week from the _29th of April to the 6th of May_ containing a number of Japanese holidays.
- **Groundhog Day** is a traditional holiday originating in the United States that is celebrated on _February 2nd_.
- **Guy Fawkes Night,** also known as Guy Fawkes Day, Bonfire Night and Firework Night, is an annual commemoration observed on _November 5th_, primarily in Great Britain.
- **Kwanzaa** is a week-long celebration held in the United States and in other nations of the West African diaspora in the Americas. It goes from _December 26th to January 1st_.
- **Republic Day** or Festa della Repubblica is the Italian National Day, which is celebrated on _June 2nd_ each year.
- **Saint Patrick's Day,** or the Feast of Saint Patrick, is a cultural and religious celebration held on _March 17th_, the traditional death date of Saint Patrick, the foremost patron saint of Ireland.
- **Valentine's Day,** also called Saint Valentine's Day or the Feast of Saint Valentine, is an annual holiday celebrated on _February 14th_.
- **Veterans Day** is an official United States public holiday, observed annually on _November 11th_, that honors military veterans; that is, persons who served in the United States Armed Forces.
- **World Braille Day** is annually celebrated on _January 4th_, the birthday of Braille inventor, Louis Braille, and recognizes the contributions of Louis Braille in helping blind and visually impaired people to read and write.

Appendix PK71

Poker hands are ranked (strongest to weakest) as follows:

	Royal Flush Ten, Jack, Queen, King, Ace of the same suit.
	Straight Flush Five consecutive values of the same suit. (N.B. Aces can be high or low but not both simultaneously).
	Four of a Kind (Quads) Four cards of the same value.
	Full House Three cards of the same value and two cards of another value.
	Flush Five cards of the same suit. (N.B. In the event two flushes are held, the highest card wins).
	Straight Five consecutive values of any suit. (N.B. Aces can be high or low but not both simultaneously). (N.B. In the event two straights are held, the highest card wins).
	Three of a Kind (Trips) Three cards of the same value.
	Two Pair Two cards of the same value and two cards of another value.
	Pair Two cards of the same value.
	No Hand No matching values. (N.B. In the event that two players have no hand, the highest card wins).