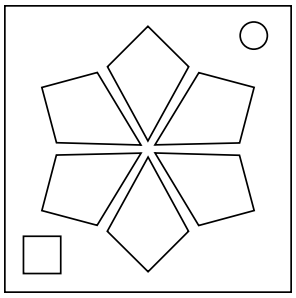
On the Subject of Simon's Sums



I think Simon just found out that the timer exists. And that's a problem since we can't just press the module at any time anymore...

This module has six buttons arranged in a snowflake pattern. The buttons could be Red, Yellow, Green, Cyan, Blue, or Magenta, and there will never be duplicates. Some of them may also flash. There will be two flashes in the first stage, three in the second, and four in the third. The stage counter will be in the bottom left corner.

To solve one stage, press certain colors at the right times.

NOTE: If you need to, angle the bomb so that the flashes are easier to recognize.

What To Press

Initial Button Values

To start, every button has an initial value. To determine the initial value, find the intersection of the location of the button and the color. Then, take the first character of the serial number, convert it from base-36 to decimal, add the obtained value from the table, and take it modulo 36.

	N	NE	SE	S	SW	NW
Red	+00	+06	+20	+24	+32	+31
Yellow	+03	+29	+35	+26	+12	+27
Green	+18	+17	+23	+09	+25	+19
Cyan	+07	+02	+14	+11	+10	+28
Blue	+01	+05	+21	+16	+04	+13
Magenta	+30	+34	+15	+08	+33	+22

Flash Values

Then, for every flash, apply the flash values for the five colors that flashed, in this order, which will be called F.

1. Start with the initial value of the color that flashed.
2. Add the number of times this color flashed in the sequence, minus one.
3. If an adjacent button flashed in this stage, add eight to F.
4. If this is the second or third stage and this color didn't flash in the previous stage, subtract fifteen.
5. If this is NOT the first flash of the stage, subtract one from F for the number of buttons you need to go counterclockwise to get to the button that previously flashed, UNLESS the previous button that flashed is the same as this one, where in this case, add thirty instead.
6. If F is negative, take the absolute value (make it positive).
7. If this F-value matches a previous F-value earlier in this stage, add one until it's unique.

Determining Button Presses

Once you obtain your flash values, submit the module by pressing buttons in the correct order at the correct times. The number of button presses is one plus the current stage number, starting with one. The stage number can always be seen in the bottom-left corner.

If this is the...

- ...first stage, press the button with the lowest flash value, then the button with the highest flash value.
- ...second stage, press the button two clockwise from the lowest flash value, then the button that is diametrically opposite the button with the second-highest flash value, then the button with the complementary color of the button with the highest.
- ...third stage, start on the button with fourth-highest flash value and go clockwise until you get to Red, Green, or Blue, and then start on the button with the third-highest flash value and go counterclockwise until you get to Cyan, Magenta, or Yellow. Then, use the button with the complementary color of the button diametrically opposite the button with the second-highest flash value. For the final press, refer to the "The Final Press" section.

When To Press

Determining Press Values

To identify when to press the buttons, we first need to obtain press values, referred to as X and Y.

1. To do this, take the flash values of the color for that stage. If the color never flashed, use the initial value instead. This value will be called X.
2. Divide X by the number obtained from the table depending on the location of the flash, and round down:

	N	NE	SE	S	SW	NW
Red	1.396	1.990	1.900	1.201	1.039	1.688
Yellow	1.714	1.101	1.180	1.854	1.367	1.675
Green	1.530	1.562	1.969	1.497	1.159	1.672
Cyan	1.488	1.048	1.759	1.794	1.356	1.555
Blue	1.883	1.887	1.961	1.342	1.409	1.138
Magenta	1.492	1.099	1.162	1.698	1.860	1.482

3. Take X modulo five. This value will now be referred to as Y.
4. If there was a previous Y-value (especially in a previous stage), add it to your current Y-value and take it modulo five.

Pressing The Button

Look at the last two digits of the timer. Press the button you need to press when the sum of the digits, modulo five, is equal to your Y-value.

There is no penalty for waiting in between presses. However, the sequence will NOT flash again until you pass or fail a stage. Refer to “Module Submission” for more information.

However, once you have pressed three buttons in the third stage, your fourth press will have a very different process. Refer to the "The Final Button" section for this press.

The Final Button

Once you have pressed three buttons in the third stage, your fourth button will be calculated using the steps below:

1. Take the sum of the F-values and the I-value of the button with the "target button", which right now, is the button with the largest F-value, and make it your X-value.
2. Add two times the sum of the previous Y-values from all of the previous stages to X.
3. Multiply your X-value by two plus a fifth of the number of strikes when you pressed the previous button, and round down.
4. Use the table under the "Obtaining Press Values" section to exponentiate X, and round down. This is your final X-value.
5. Follow the table below to modify the target button:

Condition	Action If True
The buttons (north clockwise) are Red, Green, Blue, Cyan, Magenta, Yellow.	Skip this table and use the button that flashed for your target button.
The northwest button is Yellow.	Go to the button diametrically opposite your target button.
Red is diametrically opposite Cyan.	Go to the button with the complementary color of your target button.
Yellow and Green are separated by one button.	Go counterclockwise until you reach a Red, Green, or Blue button.
Blue and Magenta are separated by one button.	Go clockwise until you reach a Cyan, Magenta, or Yellow button.
Red is in the top half of the module.	Go to the next color in the sequence RYGCBM.
Blue is in the bottom half of the module.	Go to the next color in the sequence RGBCMY.

Starting from Red, the Blue button is further clockwise than the Green button.	Go to the button two clockwise from your target button.
Starting from Cyan, the Yellow button is further clockwise than the Magenta button.	Go to the button one counterclockwise from your target button.

6. Take the X-value. Go clockwise that many buttons to get your final button. **However, if the first condition applied, skip this action.**
7. Take the digital root of X and make it your Y-value.
8. Add the Y-value obtained in the previous press.
9. If the target button is north, southeast, or southwest, add one to Y. If it's northeast, south, or northwest, subtract one.
10. Press the button when the sum of the digits is exactly your Y-value.

<u>If you did this section correctly, the module should solve.</u>

Extra Information

Module Submission

The module will NOT submit until you have pressed buttons the appropriate amount of times.

If your submission was wrong in any way, the stage counter will start flashing different letters to denote the states of the presses.

The Stage Number - The break in between flashes.
G/M - The correct button was pressed at the right time.
Y/B - The correct button was pressed at the right time.
R/C - The wrong button was pressed.

If any incorrect actions were done (wrong time or wrong button), then the module strikes, and the module will repeat the flashes. However, the button flashes will NOT regenerate.

Colorblind Mode

If colorblind mode is enabled, hovering over a button will reveal a letter where the stage counter is.

The letter refers to the first letter of each color (Red, Yellow, Green, Cyan, Blue, Magenta).

Boredom Repellent

If, after you solve the module, you get bored for any reason, you can press any of the buttons to play the song "Minuit" by Ryzmik (which is sampled in this module). You can press a button again to stop it from playing.