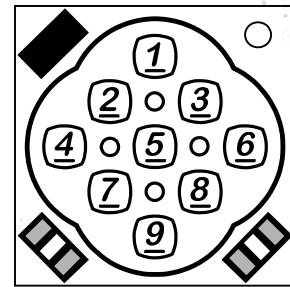


On the Subject of Turn Four

"Spin that bitch!" - William Shakespeare

This module consists of four nodes, two gears, and nine coloured tiles each labelled with an underlined number.



There is one tile of each colour:

Red, Orange, Yellow, Green, Cyan, Blue, Pink, brown, and grEy.

To disarm this module, the puzzle must be put into its solve state, shown in the image above.

To do this, enter a combination of inputs:

- Any node can be selected at any time. The selected node is lit.
- Selecting the left gear will rotate the four tiles adjacent to the selected node 90° clockwise around the node.
- Selecting the right gear will rotate the four tiles adjacent to the selected node 90° anticlockwise around the node.

To construct the sequence of inputs:

1. Use the digit of the G tile to construct a sequence of six colours.
2. Use each colour in the sequence together with serial number digit that shares its position in the sequence to find six subsequences of three inputs each.
3. Transform each subsequence with the modifiers corresponding to each of the previous colours in the sequence from right to left.
4. Concatenate the subsequences in order to obtain the eighteen input long sequence with which the puzzle has been **scrambled**. Invert this sequence.

The spring locks in the module are wound up when a rotation is made.

Rotating a node unwinds the spring locks of the other nodes.

Undoing a rotation reverts the spring locks to their previous states.

The puzzle is reset if any spring lock is wound up four times.

The puzzle must only be reset when a digit on the bomb timer matches the digit of the R tile.

Colour Sequence

Use the instructions in the table corresponding to the green tile.

Note:

- Any mathematical operators or relations are applied to the corresponding digits of the coloured tiles.
- Each entry in the sequence must be a colour.

If an instruction returns a number, the entry is the colour of the tile whose digit is that number.

G = 1	G = 2	G = 3
<ol style="list-style-type: none"> 1. Add tile 9. 2. Add the highest of R, O, and Y. 3. If tile 9 is B, add B. Otherwise add the tile that is one higher than B. 4. Add C if it is greater than the smallest serial number digit, otherwise add R. 5. Add tile 5. 6. Add Y if it is greater than E, otherwise add P. 	<ol style="list-style-type: none"> 1. Add ten minus C. 2. If the digit of C appears in the serial number, add C. otherwise add N. 3. Add tile 3. 4. Add tile 6 if N is odd, otherwise add tile 7. 5. Add the mean of R and C unless it is not an integer, in which case add the larger of R and C. 6. Add tile 8. 	<ol style="list-style-type: none"> 1. Add the highest of G and B. 2. Add tile 2. 3. Add the mean of B and P unless it is not an integer, in which case add which of B and P is even. 4. Add the median of Y, N, and E. 5. Add tile 7. 6. Add 0 if E is greater than 5, otherwise add R.
G = 4	G = 5	G = 6
<ol style="list-style-type: none"> 1. Add tile 1. 2. Add G if there are no ports. Otherwise, add tile 9 if there are nine or more ports. Otherwise add the tile whose digit is the number of ports. 3. If O, C, and N all have the same parity, add B, otherwise add which of O, C, and N has a parity different from the other two. 4. Add tile 6. 5. Add the sum of R and P if it is less than ten, otherwise add the difference between R and P. 6. Add Y if it is odd, otherwise add half of Y. 	<ol style="list-style-type: none"> 1. Add the median of R, C, and E. 2. Add the difference of O and P. 3. Add tile 4. 4. Add P if it is odd, otherwise add half of P. 5. Add tile 9. 6. Add the difference between B and C if it is not a multiple of three, otherwise add tile 1. 	<ol style="list-style-type: none"> 1. Add N if either P or E are equal to the number of ports, otherwise add R. 2. Add tile 8. 3. Add the lowest of C, B, and P. 4. If tile 1 is E, add E. Otherwise add the tile that is one lower than E. 5. Add the sum of Y and B if it is less than ten, otherwise add the difference between Y and B. 6. Add tile 5.
G = 7	G = 8	G = 9
<ol style="list-style-type: none"> 1. Add tile 3. 2. Add one less than the larger of B and P. 3. Add ten minus R. 4. Add tile 2. 5. Add ten minus the larger of O and N. 6. If the sum of C and E is a multiple of three, add C. Otherwise add E. 	<ol style="list-style-type: none"> 1. Add the mean of O and Y unless it is not an integer, in which case add which of O and Y is odd. 2. Add tile 7. 3. Add B if it is equal to either the number of lit or unlit indicators, or the sum of both. Otherwise add ten minus B. 4. Add the median of P, N, and E. 5. If R is a multiple of three, add tile 9. Otherwise if tile 1 is R, add R. Otherwise add one less than R. 6. Add tile 1. 	<ol style="list-style-type: none"> 1. Add one more than the lowest of R, Y, and B. 2. Add P if E is less than 6, otherwise add ten minus P. 3. Add tile 6. 4. Add N if it is equal to either the number of AA or D batteries, or the sum of both. Otherwise add tile 8. 5. Add tile 4. 6. Add tile 5 if C is odd, otherwise add tile 9.

Base Subsequences

Each rotation has two components, position and direction.

The position is one of the four nodes on the module: Up, Left, Right, or Down.

The direction is either 90° clockwise or 90° anticlockwise.

Anticlockwise directions are denoted with a *.

Colour X/ Serial digit X	R	O	Y	G	C	B	P	N	E
0/C/0	L,R*,L	R,R,U	D,D,U*	R*,L*,U	L*,L*,R*	R*,D*,D*	U*,R*,D	D,U,L*	R*,R*,L*
1/D/P	U,D,L*	D,R,D*	L*,D*,U*	L,R,L	L*,R*,D*	D*,U*,R	U,U,D*	D,D,U*	D*,R,U
2/E/Q	D*,R,U*	R*,L*,U	D,R*,D	U,D*,L*	D*,R*,D	R*,L*,U	U*,L,R	L*,D*,U	L*,D*,D*
3/F/R	D,R*,D*	L*,R,D	U,R,L*	U,R,L*	D,R,R	L,R*,U	R,U*,R	U,R,U	D,L*,R*
4/G/S	L,D,R*	R,D,U*	U*,L*,U*	U*,D,U	L*,U,R	L,U,U	D*,R*,R*	R*,R*,D	R,D,D
5/H/T	L,R*,U*	U,L,L	R*,L,D	D*,R,L*	L,D*,R*	D*,L,D*	R,D,L	R,L,L	R,D*,U*
6/I/U	D*,L,D*	L,R,U*	R,U*,R	D,U*,U*	L*,U*,R*	U,R,U	L,D,D	U*,D,U*	L*,R*,D*
7/J/V	L*,U,L	U,D,R*	D*,L,R*	U,D*,R	D*,U*,U*	D*,L,U*	D*,R*,L	L*,R*,U	U*,U*,R
8/K/W	L*,R*,U	U,L*,D	L*,R*,U	L*,L*,D*	D*,U*,R*	R*,R*,U	U,L*,D	U*,L*,D	R,L*,D
9/L/X	U,L*,R*	U,L*,R	R*,U,L*	L,D,L	L,U,R*	R,U,L	U*,L*,R*	D*,D*,U	R*,D*,D*
A/M/Y	D*,U,D	U,L*,L*	U*,R,D	R,U,D*	R,D*,U*	R,R,L*	U*,R,U	L,R*,D	R*,D*,R*
B/N/Z	L,L,D*	L*,L*,R*	L*,R,U*	U,R*,L*	D*,U*,R*	U*,D*,D*	D,R,R	D*,U*,L*	U,U,D

Subsequence Modifiers

Colour X-1	Modification of Subsequence X
R	Reverse the first direction.
O	Rotate the second position 180°.
Y	Rotate the third position 180° and reverse its direction.
G	Reverse the second direction.
C	Rotate the first position 180° and reverse its direction.
B	Rotate the third position 180°.
P	Reverse the third direction.
N	Rotate the first position 180°.
E	Rotate the second position 180° and reverse its direction.

Keep Talking and Nobody Explodes Mod

Colour X-2	Modification of Subsequence X
R	Swap the first and second rotations.
O	Rotate the third position 90° anticlockwise.
Y	Swap the second and third rotations.
G	Rotate the first position 90° clockwise.
C	Swap the first and third rotations.
B	Rotate the second position 90° clockwise.
P	Rotate the first position 90° anticlockwise.
N	Rotate the third position 90° clockwise.
E	Rotate the second position 90° anticlockwise.

Colour X-3	Modification of Subsequence X
R	Rotate all positions 180° and reverse all directions.
O	Cycle the positions once to the left.
Y	Cycle the positions once to the right.
G	Reverse all directions.
C	Rotate all positions 180°.
B	Cycle the directions once to the left.
P	Cycle the directions once to the right.
N	Cycle the rotations once to the left.
E	Cycle the rotations once to the right.

Keep Talking and Nobody Explodes Mod

Note: Any mention of previous subsequences refer to the subsequences after each of their own modifications.

Colour X-4	Modification of Subsequence X
R	If all direction of the previous subsequence are the same, reverse the third direction. Otherwise, rotate the third position 180°.
O	Rotate all positions 90° by the opposites of their corresponding directions.
Y	Rotate all positions 90° clockwise.
G	If the previous subsequence has an odd number of clockwise directions, reverse the second direction. Otherwise, rotate the second position 180°.
C	Rotate all positions 180° and reverse all directions.
B	Rotate all positions 90° by their corresponding directions.
P	Rotate all positions 90° anticlockwise.
N	If the previous subsequence has more than one clockwise direction, reverse the first direction. Otherwise, rotate the first position 180°.
E	Rotate all positions 90° by the directions of their corresponding rotation in the previous subsequence.

Colour X-5	Modification of Subsequence X
R	If there are more than seven clockwise directions within the previous subsequences, all directions are anticlockwise. Otherwise all directions are clockwise.
O	If there are an even number of clockwise directions within the previous subsequences, reverse all directions. Otherwise rotate all positions 180°.
Y	If there are more than seven clockwise directions within the previous subsequences, cycle the rotations once to the left. Otherwise cycle the rotations once to the right.
G	If there are an even number of clockwise directions within the previous subsequences, rotate the positions 90° anticlockwise. Otherwise rotate all positions 90° clockwise.
C	If all eight possible rotations can be found within the previous subsequences, cycle the positions once to the left. Otherwise rotate all positions anticlockwise.
B	If there are more than seven clockwise directions within the previous subsequences, rotate the positions 90° anticlockwise. Otherwise rotate all positions 90° clockwise.
P	If there are an even number of clockwise directions within the previous subsequences, cycle the rotations once to the left. Otherwise cycle the rotations once to the right.
N	If there are more than seven clockwise directions within the previous subsequences, reverse all directions. Otherwise rotate all positions 180°.
E	If all eight possible rotations can be found within the previous subsequences, cycle the positions once to the right. Otherwise rotate all positions clockwise.