

Location: Schrödinger's Kitten





Quantum Physics is weird! In Quantum Physics, things behave in mysterious ways.

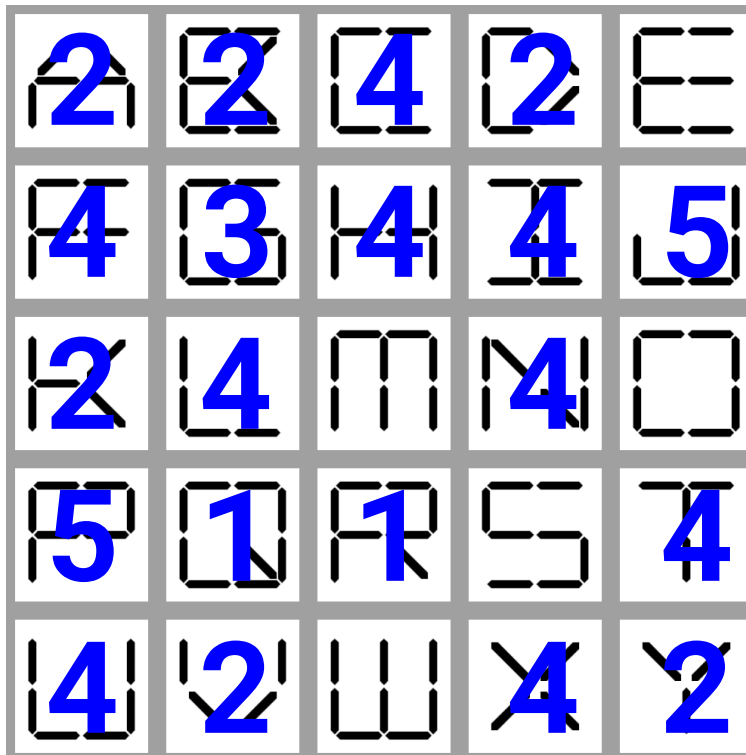
Light can act like particles and waves at the same time! Particles can act like they go through two different open slits in a wall at the same time! Matter can act like it's in multiple places at the same time! Cats can be alive and dead at the same time!

After many years and many experiments, Quantum Physicist Erwin Schrödinger's cat finally died. So he got a new kitten.

His new kitten was just as confusing as his old cat used to be! His kitten behaved like it was in multiple different rooms of his 25-room house at the same time! Only by observing the rooms could Schrödinger find his kitten. Luckily, his kitten didn't like most of his 25 rooms.

Schrödinger's kitten didn't like being in rooms with five specific properties:

2. It didn't like rooms that had an odd number of NE-SW diagonal segments like this: 
1. It didn't like rooms that had an odd number of NW-SE diagonal segments like this: 
3. It didn't like rooms that had an odd number of horizontal segments like this: 
5. It didn't like rooms that had an odd number of vertical segments like this: 
4. It didn't like rooms that had fewer than 7 segments total.



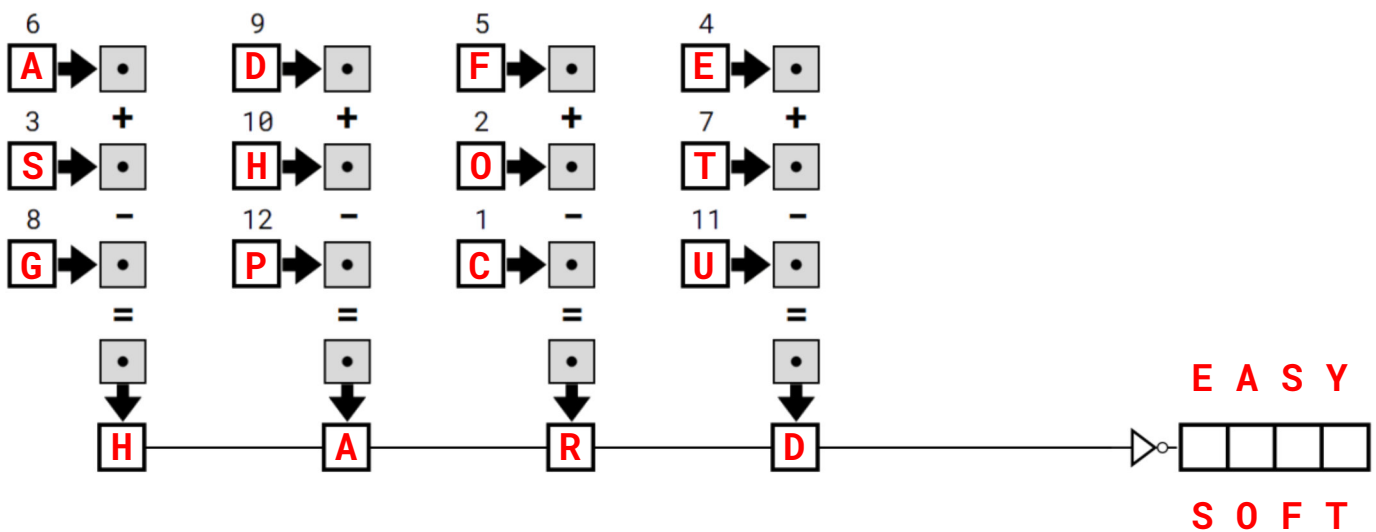
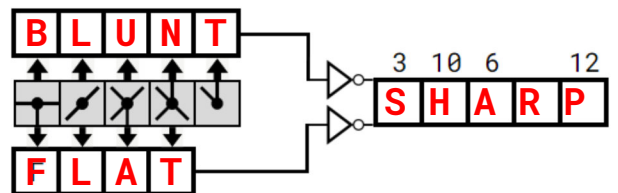
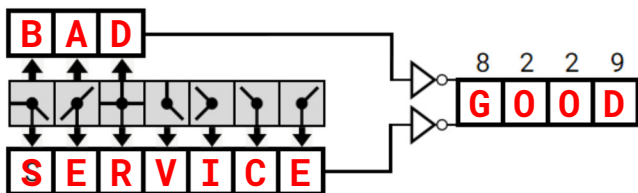
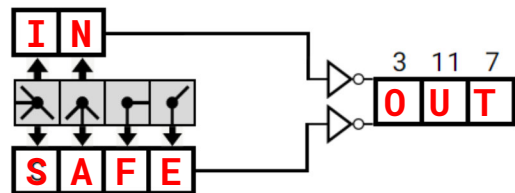
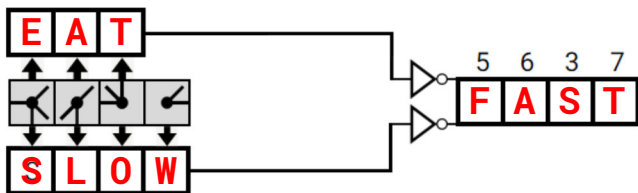
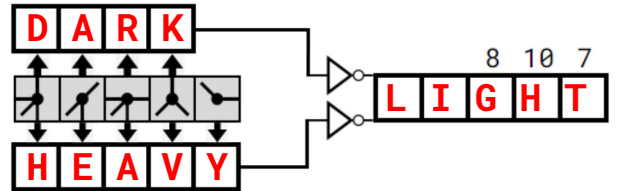
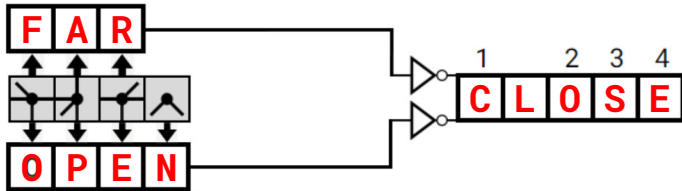
Reading the remaining letters in the order of the rules (21354) yields the answer:

What did Schrödinger like best about his new kitten? **MEOWS**

Nuclear Decay and Antiparticles

The Quantum Physicists want to go to their **semi-formal** holiday party. But before they go, they need to shut down their experimental apparatuses.

Particles are decaying from atomic nuclei in different directions before being sent through anti-particle generators that output the **opposite** particles of their inputs.



Many Worlds Interpretation

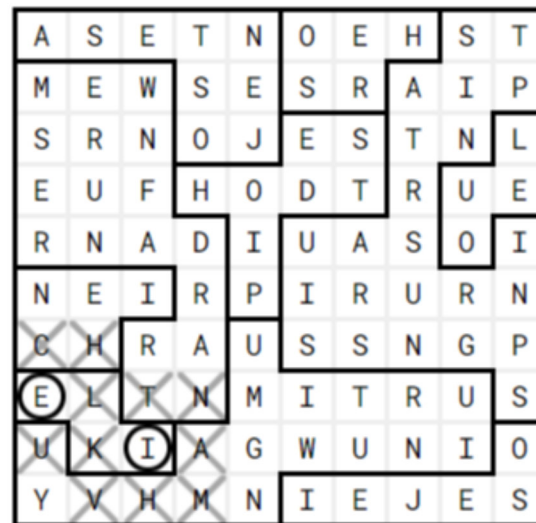
*In the Many Worlds Interpretation of Quantum Physics,
you can't be sure which way experiments might turn out in your world...*

In the universe below, there are 20 worlds. Each world fits in one grid square. In addition,

- There are exactly two worlds in each row.
- There are exactly two worlds in each column.
- There are exactly two worlds in each area demarcated by black borders.
- No two worlds are in neighboring squares horizontally, vertically, or diagonally.

Four identical copies of the universe are provided, as you may need a few tries.

To get you started, two worlds are shown in each copy of the universe.



The top worlds are uniquely determined by the rules. There are two solutions for the bottom right region, yielding two valid solutions: **PERIGEE** and **GEMINIS**

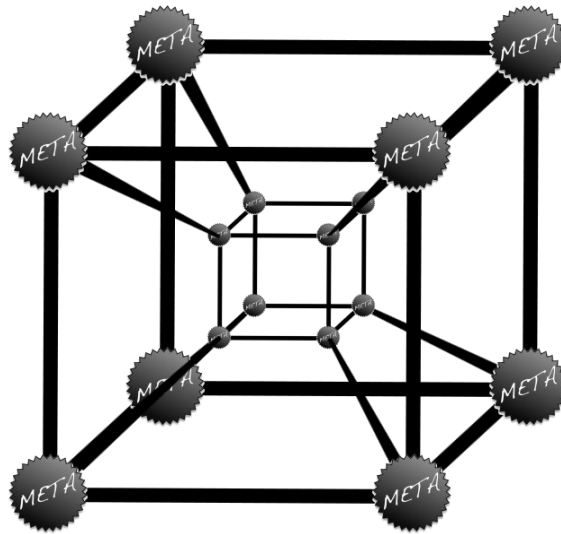


Heisenberg found that we can't precisely know both the position and the speed of a particle at the same time. Sometimes, the best we can do is **make an educated guess or two...**

1. famous man of the sea (7 4)
2. what you might find in a politician's speech (4)
3. what you might find on your shirt after you sneeze (4)
4. one of the words in a two word phrase meaning "protrude" (3)
5. sound created by _____ breathing (5)
6. word that is _____ onym for "attractive" (6)
7. things _____ dark red fruit (6 4)
8. what your golfing buddy might call your 320 yard drive (5)
9. _____ filled with negativity (8)
10. opposite of win (4)

A	L	O	T	A	I	E	R	Y	N	N	R	L	S	B	M			
C		P	T	C		E	C	T	O	O	K	I	O	O	E			
E	A	T		E	H	U	T	R	S	O	P		S	P				
S		Y			H	N				O		H						
¹ C	A	P	T	A	I	N		CH	O	O	K		² H	OY	P	E		
³ S	NP	O	T		⁴ JO	U	T		⁵ S	N	O	R	ET		⁶ CH	O	M	
E	L	Y			⁷ C	H	E	R	R	Y		P	I	TE	S		⁸ B	E
A	US	T			⁹ E	L	E	C	T	RI	O	N		¹⁰ L	O	S	ES	

Two different answers (each roughly meaning an educated guess) can be made by taking one valid letter from each slotch in order: **CONJECTURE** and **HYPOTHESIS**

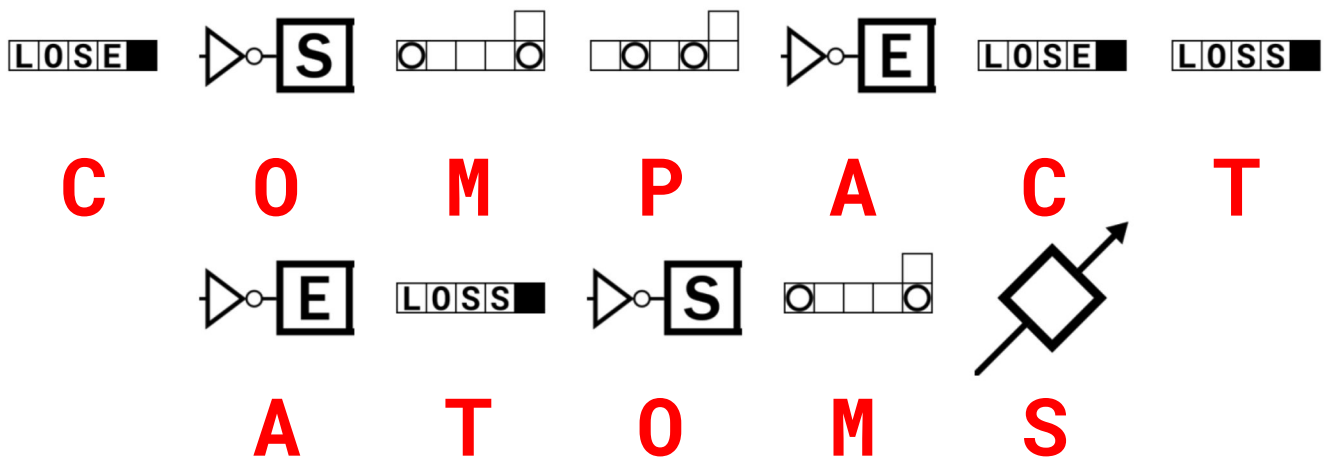
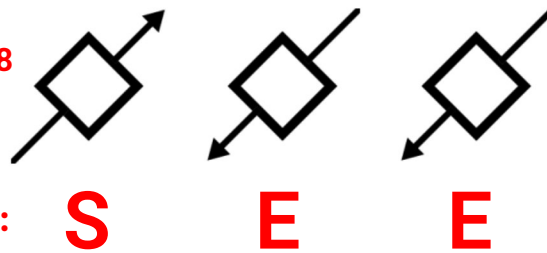


In your world, you solved the Meta and found a 4-letter word for the answer! Congrats!

But in parallel, quantum worlds, a different version of you might have solved each of the first four puzzles a different way and found a completely different 4-letter word for the Meta answer! In fact, there are 16 different possible 4-letter word solutions to the Meta puzzle!!!

Can you work together with all of the different versions of you in the parallel worlds to share all of your answers and use all of them at once to find *the one, single, final Hyper-Meta answer* below, which reveals something you might use an electron microscope to do?

Taking the extracted Meta letters from each of the 8 feeder puzzle solutions, as shown in the diagrams, produces the final answer:



Double-Slit Experiment



Photons are emitted and detected like particles. But if light is emitted in front of a screen with two vertical slits, photons are detected behind the screen in an interfering wave-like pattern! And photons are most likely to be detected halfway between the two slits!

I can see through the slits. Maybe you can too?



Bad guy, often seen twirling his mustache

Group of three people sharing power

Hung jury result

It's nothing to cry about

Non-combatant

Painting of fruit, say

Profit seeker

Post sent by plane

Similar to Aslan or Simba

Slope on a small mountain

Small tornado

Taking place in even years, say

They might be itsy bitsy teeny weeny

Type of duty a broker typically has

Unimportant detail

Very large, like a god or ocean liner

Reading down the center with Is in the slits yields the solution:

ILLUMINATI