Name _____

Pi's Quantum Adventure

Short Answer Key

1. Pi initially felt curious and intrigued when it encountered the principle of superposition.
2. Entanglement in quantum physics is a phenomenon where particles can be instantly connected regardless of distance. For example, if two entangled particles are measured, changing the state of one particle will instantaneously affect the state of the other particle, even if they are far apart.
3. Pi learned from Heisenberg's uncertainty principle that the more precisely one knows a particle's position, the less precisely one knows its momentum, and vice versa. This challenged classical physics because it suggested that there are inherent limits to how precisely we can know certain properties of particles.
4. Pi was fascinated by quantum computing's ability to use qubits that exist in a superposition of states, enabling it to perform complex calculations at unprecedented speeds. Pi saw the potential of this technology to revolutionize mathematics and science by solving complex problems more efficiently.
5. Pi's journey into the world of quantum physics changed its perspective on reality by challenging its understanding of the fundamental principles of the universe. It learned that the quantum realm operates by its own set of rules, often defying common sense and classical physics.