

Name \_\_\_\_\_

### Understanding: Uncertainty

Questions must be answered based off information presented in the video

1. How big would you have to blow a basketball up to make the atoms inside the size of a grape? How big would a nucleus be if an atom was the size of St. Peters' Church in Rome?
2. What percentage of the gross national product is due to knowledge of subatomic particles?
3. Why don't we have any *intuition* with quantum mechanics?
4. If you moved a pool (billiard) ball near the speed of light what would happen to the ball?
5. Einstein's theory of general relativity says that objects do what due to gravity?
6. We know that a particle is at A by a click we know that it is at B because of another click, what can't we know?
7. What is the quantum leap?
8. What would you see in the double slit experiment if particles (like bullets) strike the double slit?

9. Do subatomic particles act like particles (bullets) or (water) waves?
10. What did Einstein win a Nobel Prize for?
11. What does Schrödinger's equation describe?
12. What does Heisenberg's principle of uncertainty say?
13. What does Schrödinger's cat thought experiment show?
14. If you put a line of ink in glycerine in between two cylinders and turn the cylinder what happens? What happens when you turn it the other way?
15. What does Albert Einstein's theory of special relativity say?
16. Why can't particles do this (ques. 15)?
17. What did Bell show?
18. At the heart of quantum mechanics is ...