

How theories of gravity have changed, predicted black holes and the quest for a “Theory of Everything” “Einstein’s Dream”

Name _____
Date _____ Pd. _____

1. The goal of _____ is to understand the universe through the _____ number of principles possible.
2. Despite describing the _____ of gravity correctly, Newton’s equation did not explain what it was.
3. The “thought” experiment you saw with the removal of the _____ presented Newton’s idea of gravity with problems since according to Einstein nothing, including gravity, can travel faster than _____.
4. This led to Einstein’s idea of gravity in which it moves in _____ that distort the fabric of _____.
5. Magnetism is really a form of the same force as electricity as evidenced by what a _____ does when lightning strikes. Magnetism is created when _____ flow.
6. Difficulty in creating a unified theory of forces came for Einstein mostly because at the level of atoms, _____ is so much _____ a force than electromagnetism.
7. The 1920s brought a new twist to the physics of the submicroscopic world of atoms with a new science called _____ where uncertainty and probability reign.
8. In this science, if at the atomic level 1,000 possible events are predicted to possibly happen, *then they actually all DO happen but just in separate* _____. We only observe the event that happens in ours.
9. On a personal level, Einstein hated the implications of this science because, in his own words, “God _____.”
10. In the 30s while Einstein’s ideas floundered to explain what happens in atoms, the physics he disliked led to the discovery of nature’s other two forces, the _____ and _____ forces that dictate how the _____ of atoms are held together and why some are _____.
11. Sadly, with Einstein’s death in `55, the quest for _____ stalled as physicists began to specialize in either Einstein’s _____ and the very massive or _____ and the very small.
12. When objects called _____ were considered, both sciences failed since these remnants of dead stars were thought to be both incredibly _____ but also infinitesimally _____.