

Name: _____
Mr. Willis
Conceptual Physics: _____
Date: _____

Unit XII
The Universe
Need extra help?
Check out <http://www.bayhicoach.com>

XII

Video: Black Holes

1. Black holes are made out of a warpage in _____ and _____.
2. A black hole occurs when a _____ dies and leaves a bottomless pit.
3. To find black holes physicists use both radio and _____ telescopes.
4. Only in the 1990s did scientists come to a consensus that black holes actually _____.
5. Deep inside black holes every thing that we know about the universe comes to an _____.
6. To find black holes astronomers must look not for black holes themselves but for the _____ effects they generate in space around them.
7. A sudden burst of _____ gave a clue that something was occurring.
8. A stellar _____ black hole is the most common type of black hole.
9. Within the darkness of a black hole _____ is in total control.
10. Newton's laws of physics formulate the basis for modern _____.
11. Newton reasoned that all _____ in the universe has gravity, a force that reaches out from one body to another and pulls everything inward.
12. The more _____ an object has the more gravity it has.
13. In order to _____ gravity, a rocket must travel at 11 km/sec, faster than gravity tries to pull it back down.
14. To understand black holes you must first understand the _____ and _____ of stars.
15. Every star that we see has a giant _____ reaction raging at its core.
16. When the Sun runs out of fuel it will be compressed into a tiny _____.
17. Our Sun is too small to become a black hole so it is called a white _____.
18. When a giant star burns out it creates a _____.
19. When a neutron star is more than three times as heavy as our Sun the density of its mass becomes so great that a _____ forms.

20. Einstein realized that nothing could exist at a point in space without existing at a particular _____ as well.
21. It's hard to comprehend space/time because we live in a _____ dimensional world.
22. Everything that falls into a black hole is squelched out of _____.
23. The sphere that remains is called the event _____ which may be only a few kilometers in diameter.
24. The immense gravity of the _____ will suck a hole inside it that is impossibly deep to measure.
25. The faint star V404 Cygni was found to be orbiting around an _____ compact object.
26. Calculations show that V404 orbits every _____ days.
27. Nearly _____ similar objects have signaled their location in the same way as the black hole that has entrapped V404 Cygni.
28. The stretching and _____ caused as you enter a black hole is called spaghettification.
29. Not only is space stretched but so is _____.
30. A _____ is two black holes joined together by some type of tunnel.
31. Wormholes might become a _____ to the stars.
32. In the real universe, most black holes should _____ because the stars that formed them did.
33. One scientist speculates that you could use power stations to extract _____ from black holes.
34. Half of the particles from the garbage fall into the hole the other half is _____ out.
35. In the Southern Hemisphere you can see the magellanic _____.
36. Strong signals detected by radio telescopes are generated by central, super _____ black holes.
37. M87's jet is composed of _____ and is _____ light years long.
38. One of the great cosmological contradictions is that the larger the _____ the smaller the _____.
39. The _____ is where science ends and speculation begins.
40. Scientists suspect that every galaxy has a black hole, even the _____, hidden somewhere amid the dust.