

Q What is Black Hole? How black holes are formed and discovered?

BLACK HOLES:-

A black hole is a region in space where gravity is so intense that nothing, not even light can escape. This occurs because matter has been compressed into an extremely small space, creating a powerful gravitational field. Black holes are invisible, but their presence can be inferred by their gravitational effects on surrounding matter and light.

A black hole is so dense that gravity just beneath its surface, the event horizon, is strong enough that nothing - not even light - can escape. ~ NASA

The Milky Way could contain over 100 million black holes.

Example:-

At the heart of the Milky Way, there is a supermassive black

hole called Sagittarius A*.

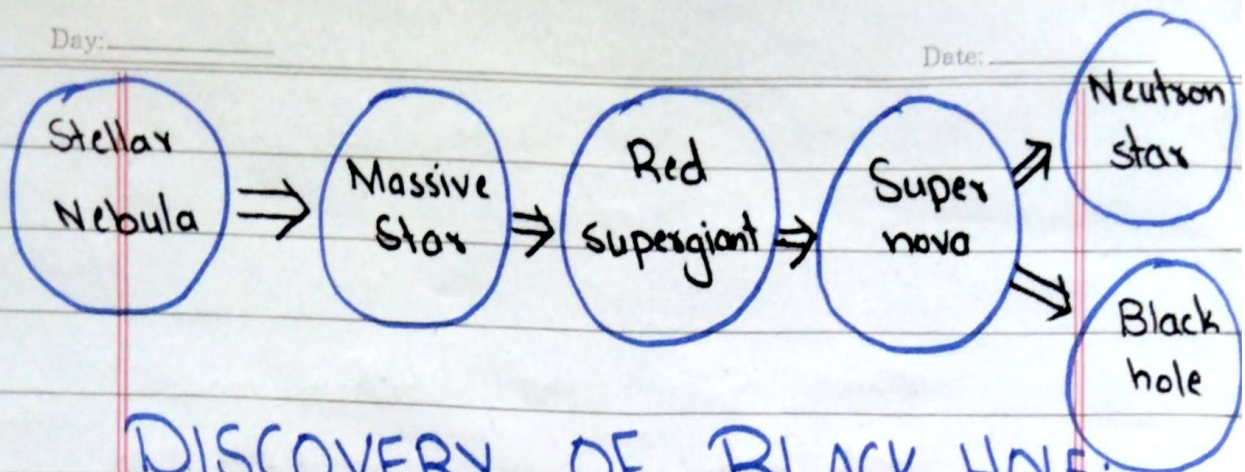
FORMATION OF BLACK HOLE

Black holes are stellar corpses, so they form when massive stars die. Stars whose birth masses are above roughly 8 to 10 times mass of our sun, when they exhaust all their fuel - their hydrogen - they explode and die leaving behind a very compact dense object, a black hole. The resulting black hole that is left behind is referred to as a stellar mass black hole and its mass is of the order of a few times the mass of sun.

Not all stars leave behind black holes, stars with lower birth masses leave behind a neutron star or a white dwarf.

Day: _____

Date: _____



DISCOVERY OF BLACK HOLE:

Albert Einstein first predicted the existence of black hole in 1916, with his general theory of relativity. The term "black hole" was coined many years later in 1967, by American astronomer John Wheeler.

The first black hole ever discovered was **Cygnus X-1**, located within the Milky Way. Astronomers saw the first signs of a black hole in 1964 when a sounding rocket detected celestial sources of X-rays according to NASA. In 1971, astronomers determined that the X-rays coming from a bright blue star orbiting a strange dark object - an all consuming black hole.