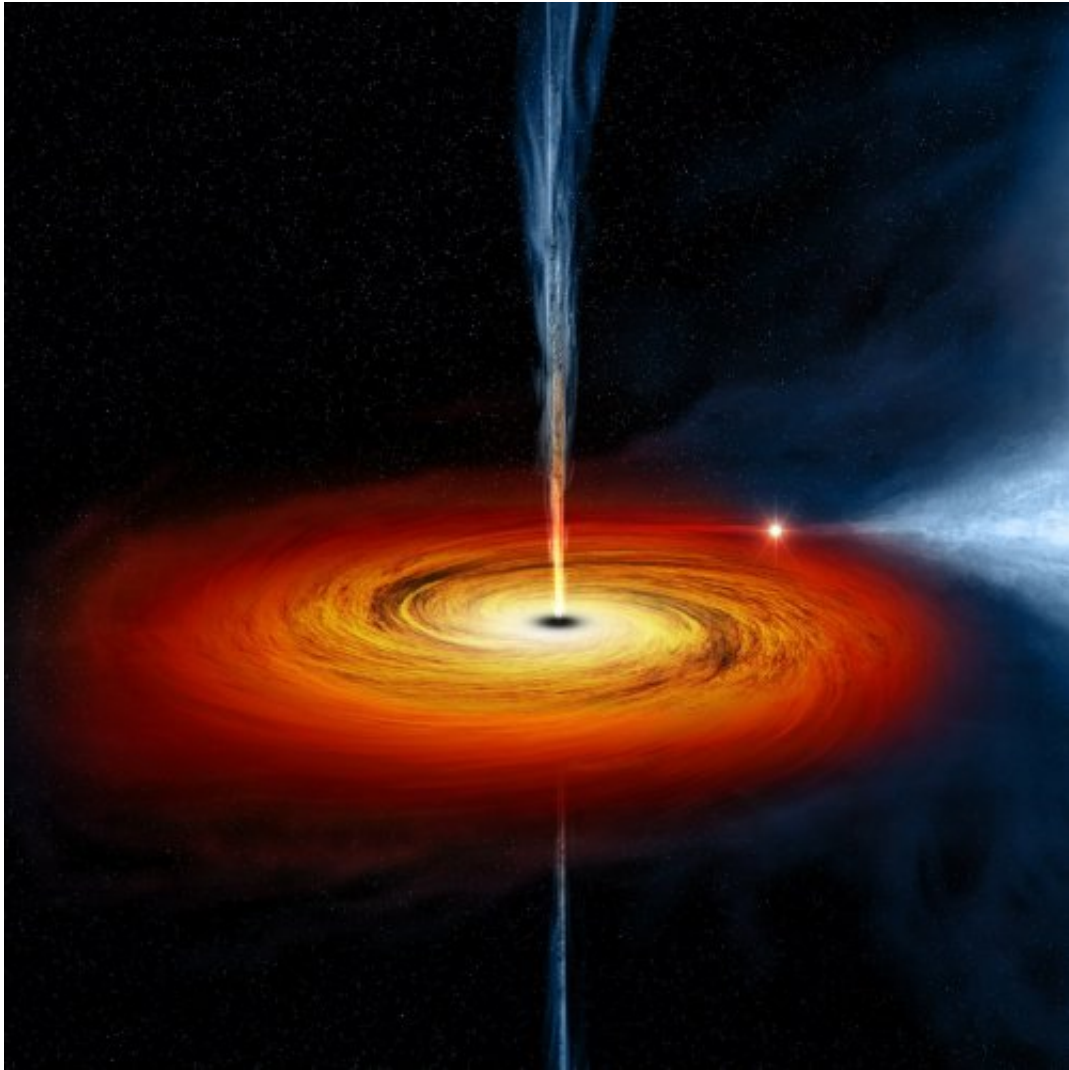


## Black Holes Quiz: questions and answers



1. What is a black hole?

- A region in spacetime beyond which events cannot affect an outside observer
- A region of spacetime exhibiting such strong gravitational effects that nothing can escape from it
- A speculative structure linking separate points in spacetime

2. What is the name of one of the theorems related to black holes?

- Hair theorem
- No-hair theorem
- Black-hair theorem

3. Where is the Laser Interferometer Gravitational-Wave Observatory (LIGO) located?

- Germany
- United States
- Switzerland

4. Who found the solution to the Einstein field equations?

- Enrico Fermi
- Karl Schwarzschild
- Albert Einstein

5. What is the name given to a location in spacetime where the gravitational field of a celestial body becomes infinite in a way that does not depend on the coordinate system?

- Milky Way
- Gravitational singularity

Spacetime

6. Who was the first to propose the idea of a body so massive that even light could not escape?

- Joseph Larmor
- John Michell
- Stephen Hawking

7. Who first introduced the term black body?

- Isaac Newton
- Gustav Kirchhoff
- Charles Babbage

8. According to a quantum field theory in curved spacetime, how many mutually entangled particles does a single emission of Hawking radiation involve?

- 2
- 3
- 1

9. How many solar masses in the supermassive black hole located at the core of our Milky Way have?

- 4.3 million
- 2.1 million
- 3.4 million

10. When did Roy Kerr found the exact solution for a rotating black hole?

- 1962
- 1964
- 1963

## Black Holes Quiz: questions and answers

### Right answers

1. What is a black hole?

A region of spacetime exhibiting such strong gravitational effects that nothing can escape from it

2. What is the name of one of the theorems related to black holes?

No-hair theorem

3. Where is the Laser Interferometer Gravitational-Wave Observatory (LIGO) located?

United States

4. Who found the solution to the Einstein field equations?

Karl Schwarzschild

5. What is the name given to a location in spacetime where the gravitational field of a celestial body becomes infinite in a way that does not depend on the coordinate system?

Gravitational singularity

6. Who was the first to propose the idea of a body so massive that even light could not escape?

John Michell

7. Who first introduced the term black body?

Gustav Kirchhoff

8. According to a quantum field theory in curved spacetime, how many mutually entangled particles does a single emission of Hawking radiation involve?

2

9. How many solar masses in the supermassive black hole located at the core of our Milky Way have?

4.3 million

10. When did Roy Kerr found the exact solution for a rotating black hole?

1963