

Name \_\_\_\_\_

## The Enigmatic Boundary: Understanding the Event Horizon of a Black Hole

### Short Answer

1. Explain the role of the event horizon in defining the boundary between the observable universe and a black hole's interior.
2. How does the size of the event horizon change as a black hole's mass increases? Provide an example of a smaller and a larger black hole.
3. What is the Schwarzschild radius, and how does it relate to the size of a black hole's event horizon?
4. Describe the challenges astronomers face when trying to directly observe black holes due to the presence of the event horizon.
5. If an astronaut were to cross the event horizon of a black hole, what would happen to them? Explain the consequences of passing this boundary.

