

Name \_\_\_\_\_

## Unveiling the Secrets of the Universe: How Physics Harnesses Differential Equations

### Open-Ended Response Questions

1. How do physicists apply differential equations to understand the behavior of subatomic particles in quantum mechanics?
2. Can you provide an example of how Maxwell's equations are used in real-world applications, such as wireless communication?
3. Why are the Navier-Stokes equations important in understanding fluid dynamics, and what challenges do physicists face in solving them?
4. How might differential equations be used to model complex systems like weather patterns or blood flow in the human body?

