Name _____

Unraveling Equations: Understanding Differential Equations

Open-Ended Response Answer Key

1. A differential equation is an equation that relates an unknown function to its derivatives, describing how the function changes over time or space.
2. Differential equations can describe how the population of a species changes over time, taking into account factors such as birth rate, death rate, and immigration.
3. Differential equations are essential in physics for modeling the motion of objects under the influence of forces, allowing scientists to understand and predict the behavior of physical systems.
4. One example is modeling the flow of heat through materials, which helps engineers design efficient heating and cooling systems for buildings and electronic devices.