

Name _____

Honors Physics 1.1 & 1.2 - Introduction to Physics

I. What is Physics? (1.1)

- Physics is the study of _____, _____, and the interactions between them.
- Physicists observe the world and try to find _____ and principles that describe how it works.
- **Major Branches of Physics**
 - **Mechanics:** The study of _____ and its causes (forces).
 - **Thermodynamics:** The study of _____ and temperature.
 - **Electromagnetism:** The study of electricity, magnetism, and _____.
 - **Relativity:** The study of objects moving at very _____ speeds.
 - **Quantum Mechanics:** The study of _____ particles.

II. The Scientific Method (1.2)

- A logical, systematic process for learning about the _____ world.
- **Key Components**
 - **Observation:** The process of gathering information using our _____.
 - **Hypothesis:** A _____ statement that provides a possible explanation for an observation.
 - **Experiment:** A controlled procedure designed to test a _____.
 - **Theory:** A broad, in-depth _____ for a wide range of phenomena that has been repeatedly tested. Theories explain the "**why**."
 - **Scientific Law:** A concise statement that describes an observed _____ in nature. Laws describe the "**what**."

Worked Examples (Fill-in)

Ex 1 — Classify the statement: "Gravity causes the apple to fall."

1. **Analyze the statement:** Does it describe *what* happens or explain *why* it happens?
 - The statement proposes an underlying cause, which is "_____."
2. **Identify the component:** An explanation for a broad set of observations is best described as a _____.
3. **Conclusion:**
 - This statement is part of a scientific _____.

Name _____

Ex 2 — Is "The sun will rise tomorrow" a valid scientific hypothesis?

1. **Recall the definition of a hypothesis.**
 - A hypothesis must be a _____ prediction.
2. **Can this statement be tested?**
 - Yes, by _____ until tomorrow.
3. **Is it based on observation?**
 - Yes, it is based on all _____ days.
4. **Conclusion:**
 - Yes, it is a _____ scientific hypothesis.