Exercise 1.1 A

1. Physical Quantities

1. Express the SI base unit for electric current according to the International System of Units.

2. Identify which of the following is a fundamental (base) physical quantity: Velocity, Force, Mass, or Work.

3. Determine the correct dimensional formula for mechanical energy or work (ML^2T^{-2})

4. Convert a speed of 72 km/h into its equivalent value in standard SI base units (m/s).

5. State the number of significant figures present in the precise scientific measurement 0.00450 m.

6. Write the prefix and symbol used to represent a multiplier of 10^{-9} in the metric system.

7. Perform a dimensional check to verify whether the equation $v = u + at$ dimensionally consistent.

8. Identify the derived physical quantity represented by the unit product kg • m/s^2.

9. Rewrite the large numerical value 5,600,000 m. in standard scientific notation with proper significant digits.

10. Determine the fundamental dimensions (in terms of ***M***, ***L***, ***T***) associated with the physical quantity of pressure.

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