

## Chapter 1

- Scientific method: Observations induce (generalize to) a hypothesis, which is used to deduce a prediction for a specific case, and that case is tested again for more observations and revise the hypothesis
- Hypothesis: A claim based on observations and assumptions that generalizes a phenomenon; has to be verifiable/falsifiable
  - Beware of hidden assumptions
- Symmetry: To be unchanged under certain operations (invariance); e.g. time and space
- Order of magnitude: Exponent term in scientific notation; if coefficient  $> 3$ , round up an order, otherwise round down (since  $\log_{10} 3 \approx 0.5$ )
- *Book counts trailing digits in numbers w/o decimal point to be significant*, e.g. 3400 has 4 sig figs

## Chapter 2

## Chapter 3