

4: Deductive Logic

Solving physics problems makes extensive use of *deductive logic*. One begins with a set of known facts (given in the problem) and a set of relevant equations and definitions (which you select, based on the problem). Using logic and mathematics, you then deduce the conclusion (the solution to the problem).

As a simple example, suppose you are given that a body travels 700 meters in 10 seconds, and are asked to find its average speed. You must search your knowledge of physics to decide what additional facts are needed to solve this problem. In this case, you decide to use the definition of “average speed”: the total distance divided by the total time. Putting the given information together with this definition, you find the solution to be 700 meters divided by 10 seconds, or 70 meter per second.

If you enjoy solving logic problems, cryptograms, and similar puzzles, then you’ll enjoy solving physics problems. Solving physics problems is the primary skill you’ll be developing in this course. Professional physicists solve similar types of problems—often more complex problems. They also do experiments to try to deduce the correct laws of Nature. In this course we’ll present some of the laws of Nature that have been deduced so far, along with some of the important results and consequences of those laws.

4: Deductive Logic is shared under a [CC BY-NC-SA 4.0](#) license and was authored, remixed, and/or curated by LibreTexts.