

Guiding Questions for Physics Writing

1. State the problem.

What is the problem that you are trying to solve, and what – if any – assumptions or idealizations are being made about the physical situation.

2. Outline the general strategy.

What physics concepts are relevant? Which general physical equations will be useful in solving this problem? Explain how the physical quantities are related to one another?

Connect the dots between any quantities in any ways that you can.

3. Explain your terminology.

What is the role of each of the symbols in these equations? For constants, just list their names and values if used in numerical calculations. For variables, briefly describe what they represent.

4. Set-up your equations.

How did you apply the information in your problem to the general equations? How did your example fit into and change the general equation. Think about how you went about putting in the information from the example you cared about, and any raw data taken, into the general equations.

5. Explain any data taking procedures used in collecting information needed to solve the physical problem.

Remember to include all pertinent information, including how to setup any apparatus used and detailed instructions on how data was acquired.

6. Organize your data.

List any raw data taken. Use graphs and charts to show concisely the relevant quantities in relationship to one another.

7. Analyze your data.

Explain how the data fits into the theory governing the problem you are solving. Comment on any unusual or anomalous data, providing an explanation of how it may have come about being recorded.

8. What were the mathematical manipulations used in the process of solving the problem?

Show the steps of algebra used to solve any tricky parts of the problem, write a short sentence for each explaining why they are true, and include any areas of difficulty that may have lead to dead ends.

9. Reflect on your final answer.

What is it that this answer tells you about the physical quantities involved, and how they are related to each other? Is this a limiting case, or are there limiting cases to this answer for which it is valid? Were there any better ways to solve the problem that you could consider? How did your solution compare and tie into work that others have done in this field of work? What was the most important, significant finding made in solving the problem?