Non-Engineering Format for Homework Solutions

As mentioned in the Engineering Format example, most problems that require a worked-out solution with calculations should be completed using engineering format (GIVEN, REQUIRED, SOLUTION, DISCUSSION). For other problems, such as programming snippets, you should use the non-engineering format.

Requirements for non-engineering format homework problem solutions:

- Copy the problem statement (it may be quickest if you do these problems using your word processor).
- When you are required to write a computer program or programming script, always include the program listing as part of your homework; a screen capture works well (using the snipping tool on Windows).
- Write what you have completed and learned in your own words. Be concise (don't turn in excessive pages).
- Problems should be presented in the order in which they are assigned (problem 1 first, problem 2 second, so on, and so forth).
- Number your pages.
- Remember that it should be easy for a grader to pick up your paper and understand what you have done.

An example of a properly formatted problem solution is shown on the next page. The example is annotated with red comments.

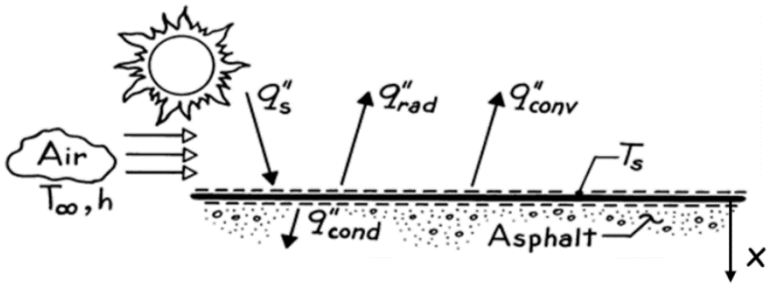
The header is included on each page and includes name, date, course, homework number, current page, and the total number of pages.

Problem 1

~~Identify the~~ heat transfer processes that determine the temperature of an asphalt pavement on a summer day. Write an energy balance for the surface of the pavement.

Problem statement is repeated.

A sketch of the system is shown below.



Problems are presented in order. i.e., Problem 1 comes first, then Problem 2

The relevant processes shown on the sketch include:

- q''_s - Incident solar radiation flux, a large portion of which is $q''_{s,abs}$, is absorbed by the asphalt surface
- q''_{rad} - Net radiation from the surface
- q''_{conv} - Convection heat transfer from the surface to the air
- q''_{cond} - Conduction heat transfer from the surface to the asphalt

Beginning with the 1st Law of Thermodynamics on the surface shown in the sketch yields

$$\frac{dE_{sys}}{dt} = \sum \dot{E}_{in} - \sum \dot{E}_{out}$$

$$0 = q''_{s,abs} - q''_{rad} - q''_{conv} - q''_{cond}$$

Multiple non-engineering format problems may be on one page.

Problem 2

The problem statement for the non-engineering format second problem goes here.

A non-engineering format problem and an engineering format problem may not be on the same page.