CSCI 338: Assignment XX

Your Name Here

Problem 1

Your solution to Problem 1 goes here. Remember, *each problem* should be starting on a new page.

If the problem has subparts, it will be convenient to use the enumerate environment:

1. **TODO**: give the solution to subproblem (1) here.
2. More TODO: give the solution to subproblem (2) here.

If for whatever reason enumerate will not suffice (perhaps if your answers are getting rather long), then use subsection*:

Problem 1(a)

TODO: give solution here.

Problem 1(b)

TODO: give solution here, etc.

And the second problem should go on a fresh page.

1 Problem 2

Well, this looks weird initially, but you will like it when you have to deal with mathematical formulas, like $a^2 + b^5 = c^2$ and $(c > 0) \rightarrow [c^x > 2020]$ implies a and b are good guys, c is horrible and x is a disaster..

Or, what is even more complex: the p-*Wasserstein* distance is defined as

$$W_p(D_k(U), D_k(V)) = \left(\inf_{\phi} \sum_{x \in D_K(U)} \|x - \phi(x)\|_\infty^p \right)^{1/p},$$

where $\phi : D_k(U) \rightarrow D_k(V)$ is a bijection. This hard to do with Word.

If you don't need a line, but being cautious so that you don't want to delete the line, just comment it out using % at the beginning of that line.

Besides dealing with math formulas, one of the advantage of using Latex to do your assignments is that making changes are a whole lot easier. Imagine that you do the assignment by hand, if you finish a half page and then find that some serious mistakes are made — you would have no choice but re-writting the half page by hand again (even some part of it does not contain any mistake or error). With Latex, this is not a problem at all!

You could also include a figure (in either .pdf or .eps format). In Figure 1, I include a figure named **fig8.pdf** in the same directory as the HW-XX.tex file.

Problem 3

Prove that if x and y are both even integers, then

$$z = \frac{37x - 11y}{2}$$

is also an even integer.

Proof: By assumption, if x and y are both even integers, then we could rewrite $x = 2a$, $y = 2b$ where a, b are both integers. Then, $z = \frac{37x-11y}{2} = \frac{74a-22b}{2} = 37a - 11b$, which must also be an integer.

□