1. [**5 points**] Why do we pronounce the X in LaTeX differently than one might expect in English?
2. [**10 points**] Add an XKCD comic to your document. You should add the comic as an image, and add a link to the XKCD site to credit the creators. The link should be clickable in the final PDF.
3. [**10 points**] If you had a truth table in a CSV file, and wished to transfer it into LaTeX, would you re-write it by hand or create a program that would typeset the table for you? If you would re-write it, explain why. If you would create a program, write some pseudocode.
4. [**5 points**] Create an example of each of the following in LaTeX: A fraction, an exponent, the greek letter σ (sigma), uppercase Σ (sigma), and an expression with at least two variables.
5. [**10 points**] Create a truth table for the following expression: $\neg(p \vee q) \wedge r$.
6. [**10 points**] Show that the following expressions are equivalent:

$$(p \vee q) \rightarrow \neg r$$

$$\neg r \vee (\neg p \wedge \neg q)$$

7. [**10 points**] Use a subset proof to show that $(A \cap B) \cup (B \cap C) \equiv B \cap (A \cup C)$.
8. [**10 points**] Write the following in mathematical notation: Set A contains ordered pairs of integers such that these pairs add to 10 or multiply to 16.
9. [**10 points**] Give an example of an equivalence relation, and prove that it is an equivalence relation.
10. [**10 points**] Create an Antisymmetric relation on $\{1, 4, 9, 16, 25\}$.
11. [**10 points**] If a relation is not reflexive, does that mean it is irreflexive? If this is true, prove it. If it is false, provide a counterexample.