

Possible Heuristics:

$\text{abs}(\text{numTags}(\text{current}) - \text{numTags}(\text{goal}))$

Reasoning: If the number of tags are different, it will require at least one move to remove/add one tag, so determining the differences in the number of tags should be admissible to the actual number of moves required.

Issues: If the number of tags are the same, it will count it as being the goal state, even if the contents of the tag are not the same.

Count the differences

Reasoning: Counting the differences (missing variables/tags) between the expressions would give a sense of which of the next possible states are the closest.

Issues: May not be admissible (it is possible to add a tag and a variable with the same step)

Can we go without a heuristic?

Answer: Maybe

How: We would need to use a breadth first or depth first search, which may be possible since we are only implementing so many different actions that can be taken.

Issues: It would be a blind search, so we would not know if what we do is really getting us any closer. Since there is technically a way to go infinitely, so it could be a very long run time (we would definitely need to use a visited list to try to limit this).