Group Work, CSC-161
Closure

For each of the problems below, first decide whether the criterion makes sense. (Remember for a set to be closed under **blah**, it has to make sense to do **blah** to the *elements* of the set.) For those criteria that do make sense, either find an example, or state that no such example exists.

1. A regular language.
2. A language that is not regular.
3. A finite language.
4. An infinite language.
5. A language that is closed under reversal.
6. A language that is not closed under reversal.
7. A language that is closed under concatenation.
8. A language that is not closed under concatenation.
9. A language that is closed under union.
10. A language that is not closed under union.
11. A finite set of languages.
12. An infinite set of languages.
13. A set of languages that is closed under reversal.
14. A set of languages that is not closed under reversal.
15. A set of languages that is closed under union.
16. A set of languages that is not closed under union.
17. A set of languages that is closed under intersection.
18. A set of languages that is not closed under intersection.
19. A set of languages that is closed under complement.
20. A set of languages that is not closed under complement.
21. A set of languages that is closed under concatenation.
22. A set of languages that is not closed under concatenation.
23. A set of languages that is closed under star closure.
24. A set of languages that is not closed star closure.