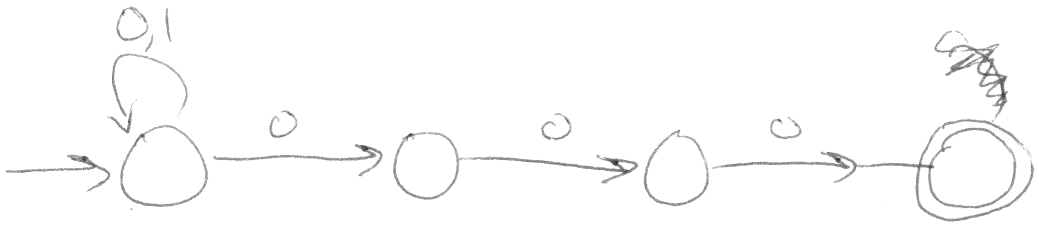
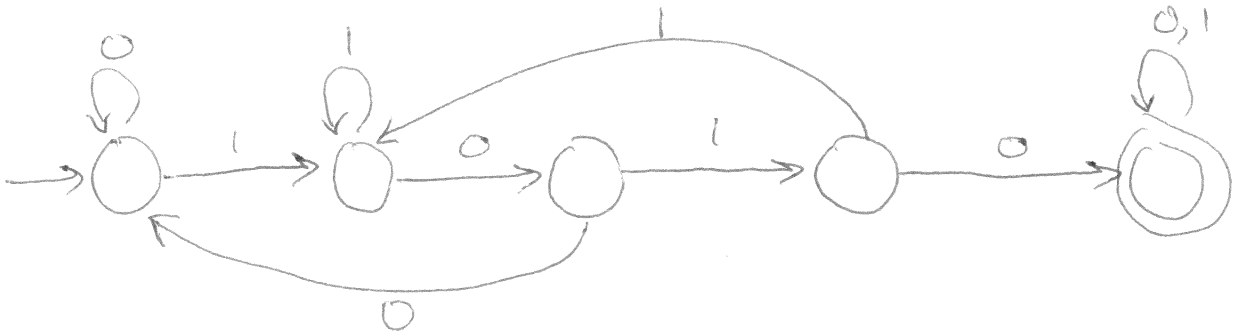
Name: Solutions

Directions: Show all work. No credit for answers without work.

1. **[4 points]** Give a 4-state NFA for the language $\{w \mid w \text{ ends with } 000\}$.



2. **[3 points]** Let $\Sigma = \{0, 1\}$. Give a DFA for the language $\{w \mid w = x1010y \text{ for some strings } x \text{ and } y\}$. (Another way to describe this language is that it is the set of all words that contain 1010 as a substring.)



3. **[3 points]** Convert the following NFA to a DFA.

	a	b
1	123	3
2	$\emptyset$	1234
3	2	$\emptyset$
4	$\emptyset$	$\emptyset$