Let $\Sigma = \{0, 1\}$. Consider the language:

$$A = \{ 0^k u 0^k \mid k \geq 1 \text{ and } u \in \Sigma^* \}$$

1. List strings in $A$ ...... and strings NOT in $A$

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2. Describe the language in the simplest way possible:

3. NFA: (?) .................. OR prove it is not regular

4. Regular expression: (?)

5. CFG:

6. Show a derivation of one of the longer strings from 1, above.
Let $\Sigma = \{0, 1\}$. Consider the language:

$$B = \{ 0^k 1 u 0^k \mid k \geq 1 \text{ and } u \in \Sigma^* \}$$

1. List strings in $B$ ...... and strings NOT in $B$

2. Describe the language in the simplest way possible:

3. NFA: (?) ............... OR prove it is not regular

4. Regular expression: (?)

5. CFG:

6. Show a derivation of one of the longer strings from 1, above.