1) Write the EBNF description of the Pascal function declaration. (If you are not familiar with the PASCAL language, consult the library.)

2) Determine if the following grammar is ambiguous. If so, prove it.

\[
\begin{align*}
S & \rightarrow A \\
A & \rightarrow A + A \\
& \mid \text{id.}
\end{align*}
\]

3) Write a grammar for the language consisting of strings that have n copies of the letter "a" followed by the same number of copies of letter "b", where, n $\geq 0$. For example, the string ab, aaaaabbbb, and aaaaabbbbb are in the language but a, abb, ba and aaabb are not.

4) Describe, in English, the language defined by the following grammar:

\[
\begin{align*}
S & \rightarrow A B C \\
A & \rightarrow a A \mid a \\
B & \rightarrow b B \mid b \\
C & \rightarrow c \mid 0
\end{align*}
\]

Directions:
1) Provide a cover sheet
2) Type your answers.
3) Staple your paper.