Consider the grammar \((N, T, P, \sigma)\) given as defined below.

\[
N = \{ <s> \}
\]

\[
T = \{A, B, C, ..., Z, \land, \lor, !\}
\]

\[
P = \left\{ <s> \rightarrow <s> \land <s> \right\}
\]

\[
P = \left\{ <s> \rightarrow <s> \lor <s> \right\}
\]

\[
P = \left\{ <s> \rightarrow ! <s> \right\}
\]

\[
P = \left\{ <s> \rightarrow A|B|C| \cdots |Y|Z \right\}
\]

\[
\sigma = <s>
\]

1a) How many valid words are in the language this grammar defines?

1b) Show that “\(A \land B \lor ! C\)” is in this language by providing a derivation.

2) Write a grammar that generates the strings over \(\{a, b, c\}\) that end in \(abcba\).