Consider the following incorrect Prolog program.

\[
\text{factorial}(N,M) \text{ holds when } M = N \times (N-1) \times \ldots \times 2 \times 1 \text{ (and when } N = 0 \text{ and } M = 1). \\
\text{factorial}(0,1). \\
\text{factorial}(N,F) : - N > 0, \text{ factorial}(N,F1), F \text{ is } N \times N.
\]

1. Does this program terminate? \textbf{Answer:} No. (It actually runs out of memory.)

2. Correct the second clause of the program so that it correctly computes the factorial. \textbf{Answer:}

\[
\text{factorial}(0,1). \\
\text{factorial}(N,F) : - N > 0, \text{ N1 is } N-1, \\
\text{ factorial}(N1,F1), F \text{ is } N \times F1.
\]