Let $G$ be the expression, term, factor grammar from Example 2.4 and Exercise 2.1 in Sipser. The sentential symbol is $E$. The rules are given:

\[
\begin{align*}
E & \rightarrow E + T \\
& \mid T \\
T & \rightarrow T \times F \\
& \mid F \\
F & \rightarrow (E) \\
& \mid a
\end{align*}
\]

Show that this grammar generates the string $a \times a + a$ by giving a **leftmost** derivation.