Determine the leftmost derivation of these sentences

b c b

g g h h x c

x c

#	Rules
1	$S \rightarrow A\,\$$
2	$S \rightarrow K\,L\,A\,\$$
3	$A \rightarrow b\,A$
4	$A \rightarrow c\,A$
5	$A \rightarrow \lambda$
6	$K \rightarrow g\,K\,h$
7	$K \rightarrow \lambda$
8	$L \rightarrow x$

Determine the leftmost derivation of these sentences

$$
\begin{array}{lrl}
(1) & S & \Rightarrow \quad A\ \$ \\
(3) & S & \Rightarrow \quad b\ A\ \$ \\
(4) & S & \Rightarrow \quad b\ c\ A\ \$ \\
(3) & S & \Rightarrow \quad b\ c\ b\ A\ \$ \\
(5) & S & \Rightarrow \quad b\ c\ b\ \$
\end{array}
$$

$$
\begin{array}{lrl}
(2) & S & \Rightarrow \quad K\ L\ A\ \$ \\
(7) & S & \Rightarrow \quad L\ A\ \$ \\
(8) & S & \Rightarrow \quad x\ A\ \$ \\
(4) & S & \Rightarrow \quad x\ c\ A\ \$ \\
(5) & S & \Rightarrow \quad x\ c\ \$
\end{array}
$$

$$
\begin{array}{lrl}
(2) & S & \Rightarrow \quad K\ L\ A\ \$ \\
(6) & S & \Rightarrow \quad g\ K\ h\ L\ A\ \$ \\
(6) & S & \Rightarrow \quad g\ g\ K\ h\ h\ L\ A\ \$ \\
(7) & S & \Rightarrow \quad g\ g\ h\ h\ L\ A\ \$ \\
(8) & S & \Rightarrow \quad g\ g\ h\ h\ x\ A\ \$ \\
(4) & S & \Rightarrow \quad g\ g\ h\ h\ x\ c\ A\ \$ \\
(5) & S & \Rightarrow \quad g\ g\ h\ h\ x\ c\ \$
\end{array}
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Which terminals predict which Starting Goal rule?

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Which terminals predict which Starting Goal rule?

Which starting goal rules does an empty sentence (without tokens) predict?

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Congrats, now you know about **predict sets**.