Let $A$ be the language consisting of all strings over $\{0, 1\}$ containing a 1 in the third position from the end. Does the following NFA recognize $A$? Explain why.

\[ \text{Ans:} \]

Compared with the original NFA (textbook Figure 1.31), this NFA has two extra transitions. Therefore, it accepts all strings that can be accepted by the original NFA. We only have to check whether it accepts some strings not in the language $A$. Since the "checking" is still in place, this NFA accepts no strings not in $A$.

\[ \therefore \text{It recognizes } A! \]