Let \( x \) be an integer state variable. Is the following specification implementable?

(a) \( x \geq 0 \Rightarrow x' = x^2 \)

\[ \begin{align*}
\text{\$} & \quad \text{No, not implementable. When } x = 2, \text{ we require an integer } x' \text{ whose square is } 2. \text{ There isn't one.}
\end{align*} \]

(b) \( x' \geq 0 \Rightarrow x = 0 \)

\[ \begin{align*}
\text{\$} & \quad \text{Yes, implementable. } x' = -1 \text{ is satisfactory for any } x.
\end{align*} \]

(c) \( \neg (x \geq 0 \land x' = 0) \)

\[ \begin{align*}
\text{\$} & \quad \text{Yes, implementable. } x' = 1 \text{ is satisfactory for any } x.
\end{align*} \]

(d) \( \neg (x \geq 0 \lor x' = 0) \)

\[ \begin{align*}
\text{\$} & \quad \text{No, not implementable. When } x = 0, \text{ there is no satisfactory } x'.
\end{align*} \]