Due at the beginning of recitation R06 on Wednesday September 26.

In lecture we saw the following design for a GCD (greatest common divisor) sequential circuit:

\[
\begin{align*}
p &= (a^t \geq b^t) \\
a^{t+1} &= p \cdot (a^t - b^t) + \bar{p} \cdot b^t \\
b^{t+1} &= \bar{p} \cdot b^t + p \cdot a^t
\end{align*}
\]

1. Demonstrate how the mux for register b can be eliminated from this circuit.

2. Add additional muxes to support injecting initial values of a and b to start the GCD computation.