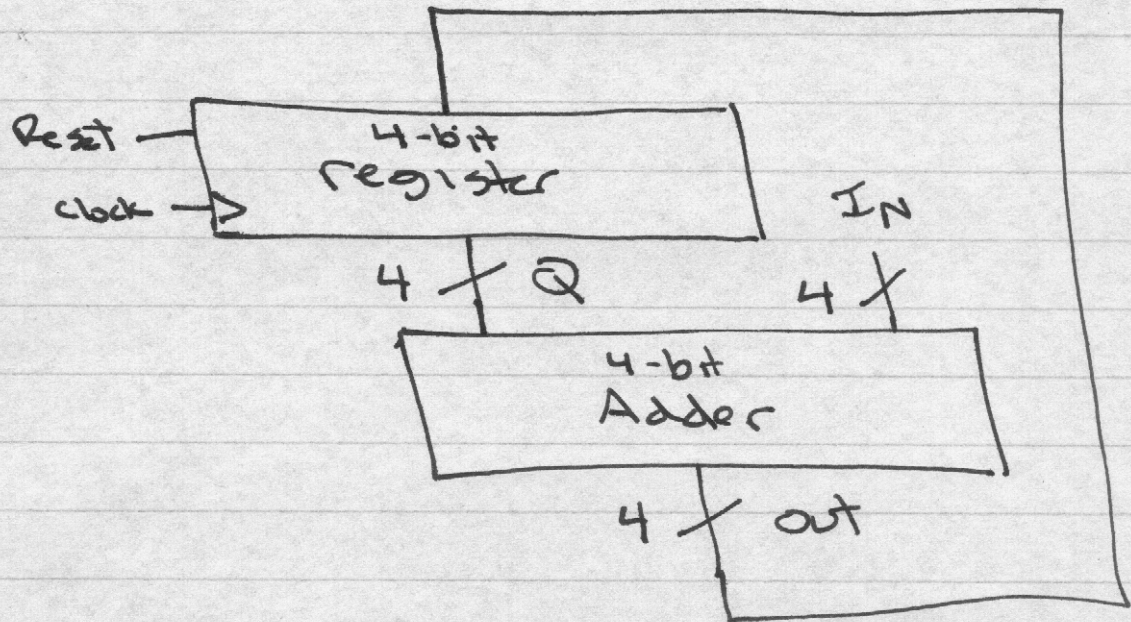


Problem 4 Solutions

Schematic:



Circuit continually add the input (IN) to the value stored in the register and stores the new value into the register. If $IN=1$, this circuit is merely an accumulator.

- A) The reset is asynchronous.
This is known because the reset is in the sensitivity list of the register. Therefore, the reset does not depend on the clock.
- B) The purpose of the hold statement is to allow the

user to change the bus width
by only changing a single
line of code that may be
easily found at the top of
the file.