Project 1 of ENCE 460

Consider a system with impulse response:

$$h[n] = u[n] - u[n - N] = \begin{cases} 1 & 0 \leq N \leq N - 1, \\ 0, & otherwise. \end{cases}$$

The input is $x[n] = a^n u[n]$. To find the output at a particular index n, we must form the sums over all k of the product $x[k]h[n - k]$. In this case, we can find formulas for $y[n]$ for different sets of values of n.

(1) Please plot $y[n]$ with $N = 6$. Then, you may want to compare your figure with Figure 2.10 (d).
(2) Please plot $y[n]$ with $N = 10$.
(3) Please plot $y[n]$ with $N = 100$.

For the project report submission, you need to submit a report similar to your lab report, and the source codes.