EXERCISE 5.12: Determine the impulse response $h[n]$ of the 51-point causal running averager and determine the impulse response $\tilde{h}[n]$ for the 51-point centralized running averager.

51-pt. CAUSAL RUNNING AVERAGE is:

\[ y[n] = \frac{1}{51} \sum_{k=0}^{50} x[n-k] \]

\[ \Rightarrow h[n] = \frac{1}{51} \sum_{k=0}^{50} \delta[n-k] \]

51-pt CENTRAL RUNNING AVG:

\[ y[n] = \frac{1}{51} \sum_{k=-25}^{25} x[n-k] \]

\[ \Rightarrow h[n] = \frac{1}{51} \sum_{k=-25}^{25} \delta[n-k] \]