

Please hand in this paper to the instructor before the end of the lecture.

Lastname (PRINT): _____ Firstname: _____

Student number: _____ Date: _____

Q. A centred (non-causal) 5-tap moving-average FIR filter is defined by

$$y[n] = \frac{1}{5} \sum_{k=-2}^2 x[n-k].$$

Compute $y[n]$ for input $x[n] = [2, -1, 0, 3, 1, 0]$. Assume $x[n]$ is 0 outside given samples.

Begin by writing out the 5-tap moving-average filter. Next confirm that the above expression for computing $y[n]$ is akin to convolving this filter with the signal $x[n]$.