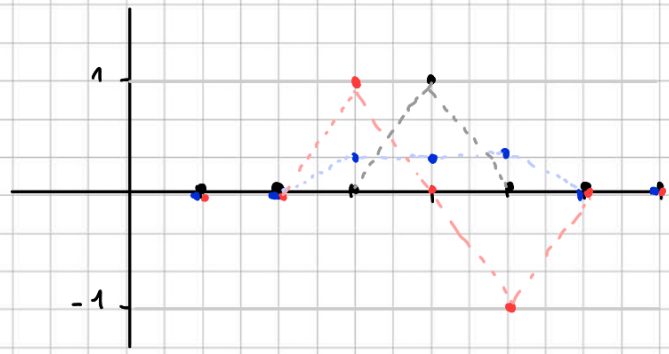


## ESERCIZIO PER CASA (LEZIONE 3)

$$\text{SIGNAL: } [0 \ 0 \ 0 \ 1 \ 0 \ 0 \ 0]$$

$$\text{FILTER}_1: \left[ \frac{1}{3} \ \frac{1}{3} \ \frac{1}{3} \right]$$

$$\text{FILTER}_2: [-1 \ 0 \ 1]$$



Signal for  
Zero padding:

0	1	2	3	4	5	6	7	8
0	0	0	0	1	0	0	0	0

Filter<sub>1</sub>:

$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$
---------------	---------------	---------------

\* convolution<sub>1</sub>:

0	0	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	0	0
---	---	---------------	---------------	---------------	---	---

Filter<sub>2</sub>:

-1	0	1
----	---	---

\* convolution<sub>2</sub>:

0	0	1	0	-1	0	0
---	---	---	---	----	---	---