

$$f * \underline{g} = \underline{h}$$

Conv.

$$f * g = \int_{-\infty}^{\infty} f(t) g(\tau - t) d\tau$$

\sum

2	3	4	6	3
2	3	4	6	3
1	5	9	7	8
1	4	11	5	3
6	9	7	2	4

*

1	1	0
0	1	2
1	0	1

$$2 \times 1 + 3 \times 1 + 4 \times 0 + 1 \times 0$$

$$+ 1 \times 5 + 9 \times 2 + 1 \times 1 + 4 \times 0 + 11 \times 1$$

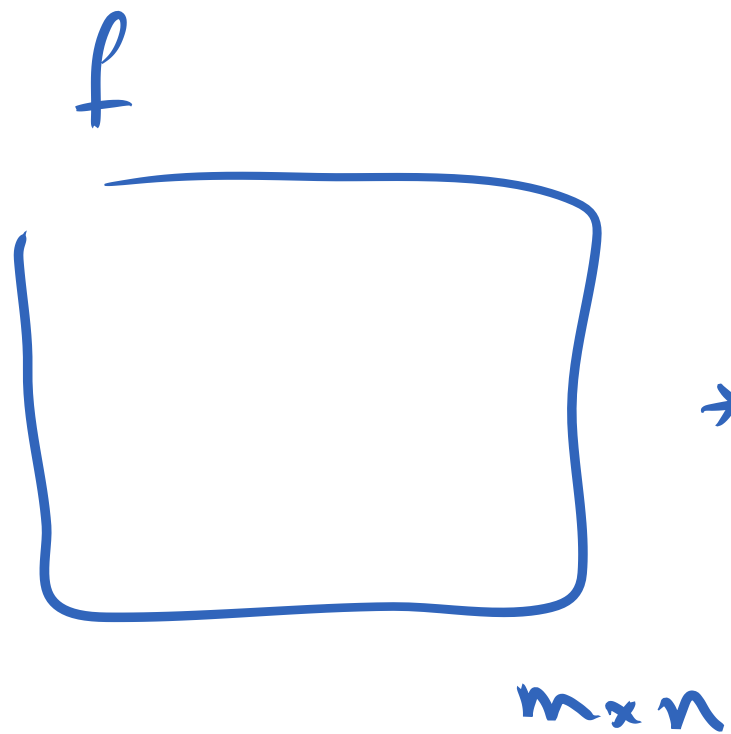
$$3 \times 1 + 4 \times 1 + 6 \times 0 +$$

$$5 \times 0 - - -$$

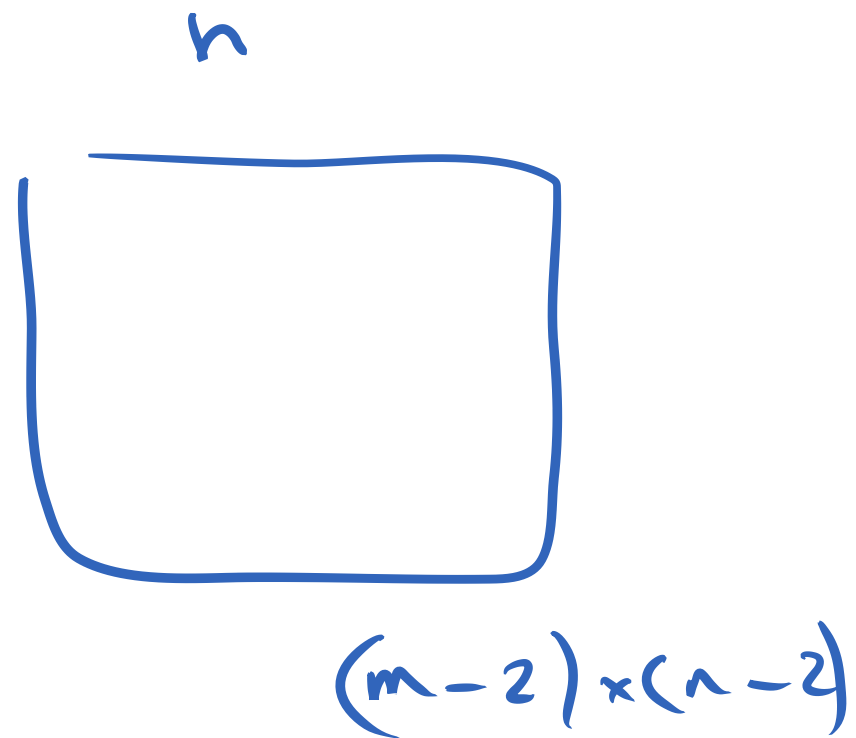
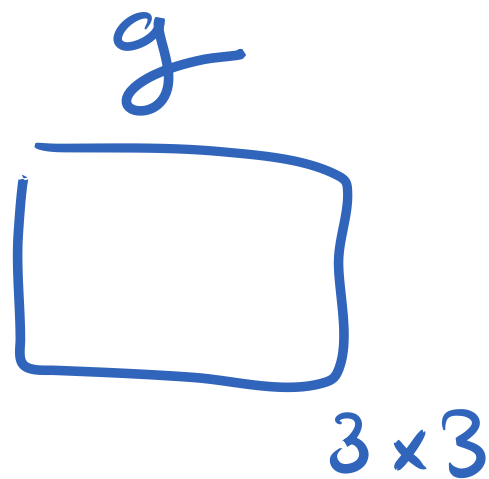
$$= 39$$

$$= 40$$

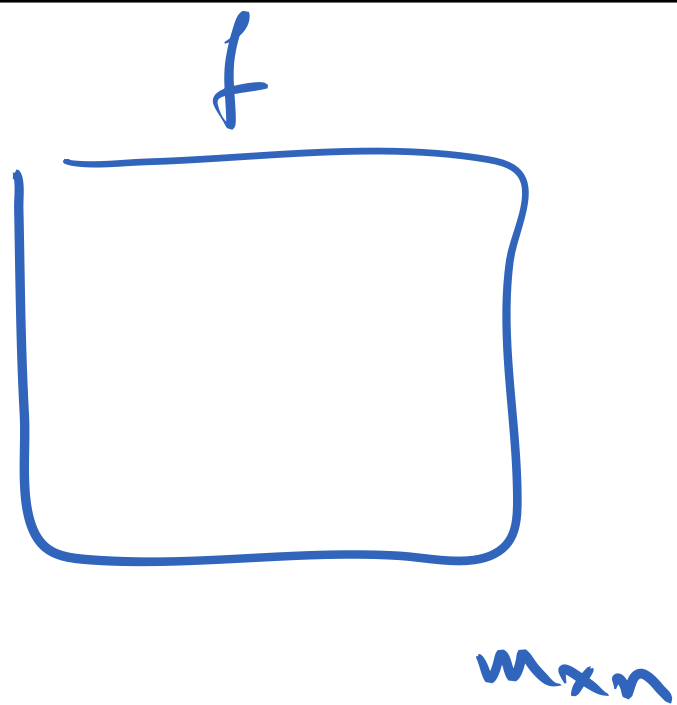
h		
40	39	0
0	0	-



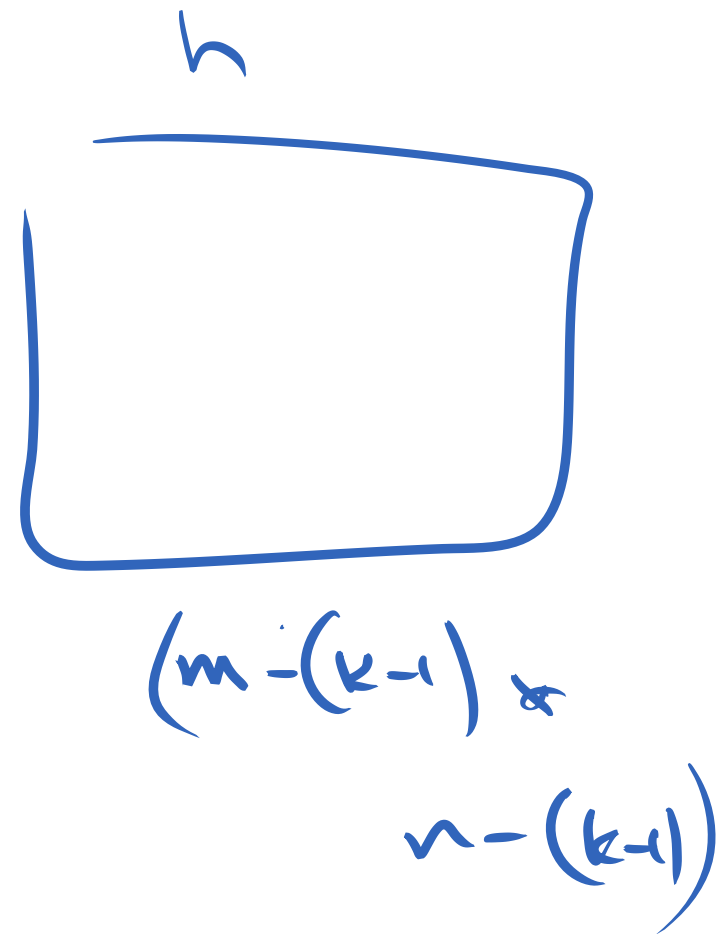
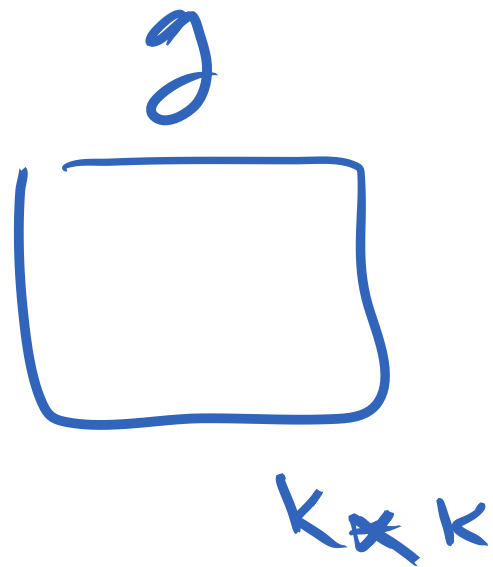
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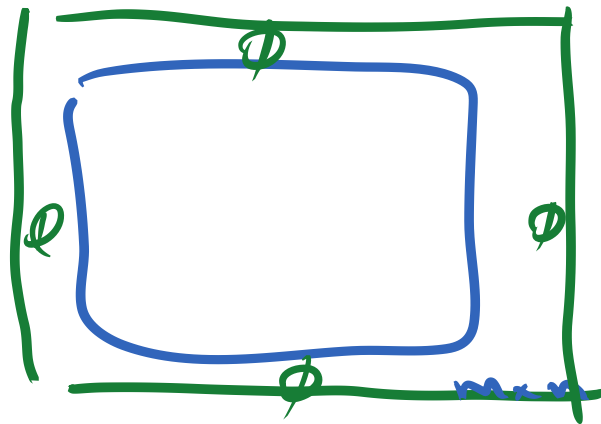
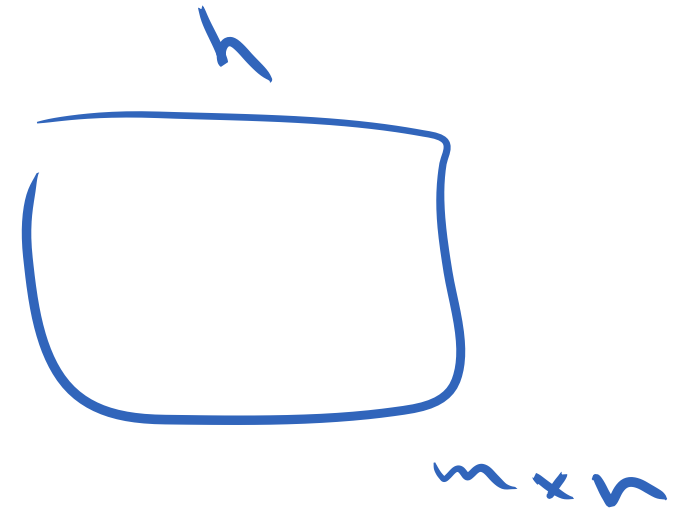
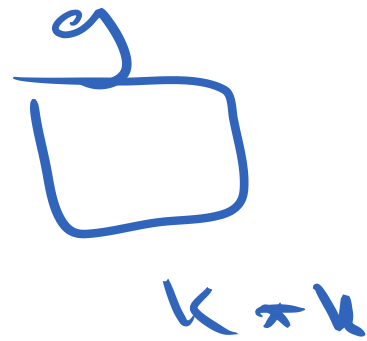
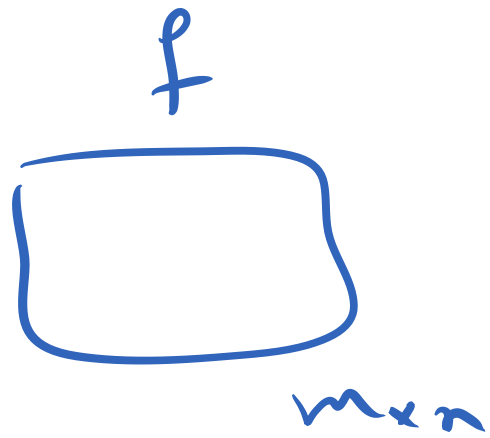
Valid



$*$

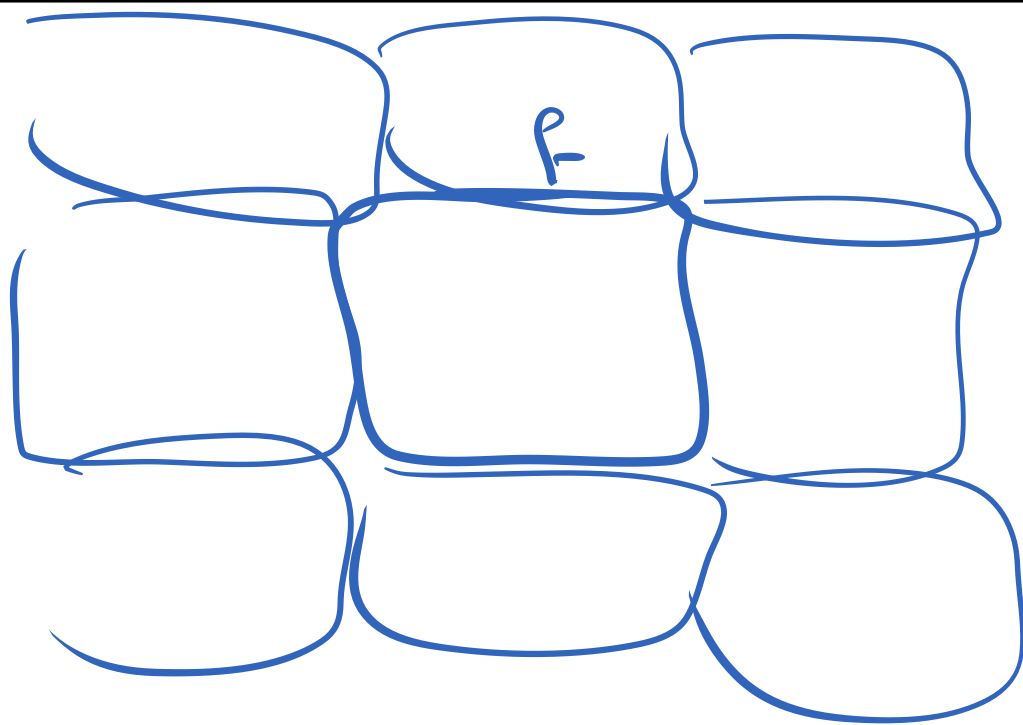


Same



$m \times n$

3×3



2	3	4	6	3
1	5	9	7	8
1	4	11	5	3
6	9	7	2	4

n

*

$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$
$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$
$\frac{1}{9}$	$\frac{1}{9}$	$\frac{1}{9}$

✓
ملیر حاصلین

$$2 \times \frac{1}{9} + 3 \times \frac{1}{9} + 4 \times \frac{1}{9} + \dots$$

$$\frac{1}{9} (2 + 3 + 4 + 1 + \dots)$$

