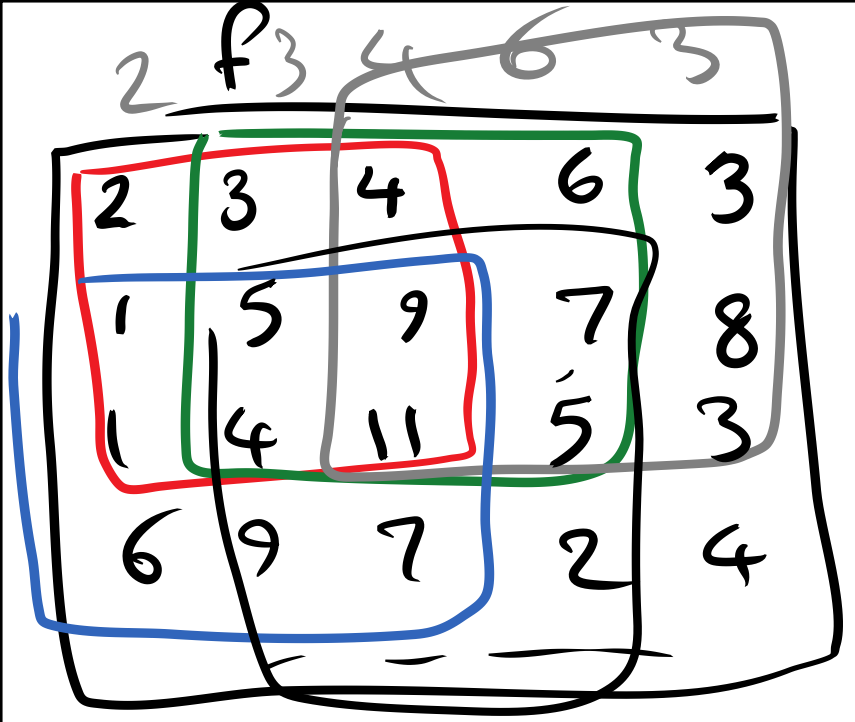
$f * g = h$

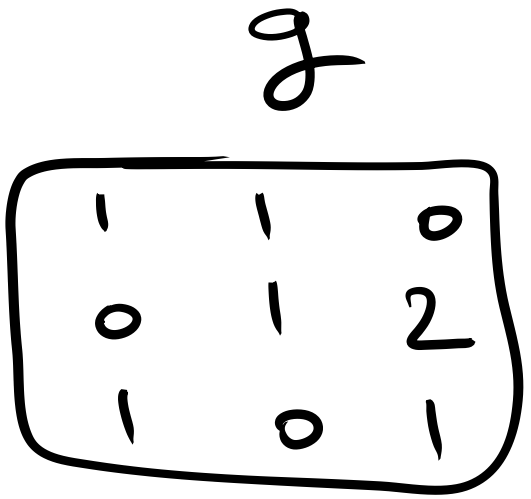
Conv.

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

$$\sum$$



$*$



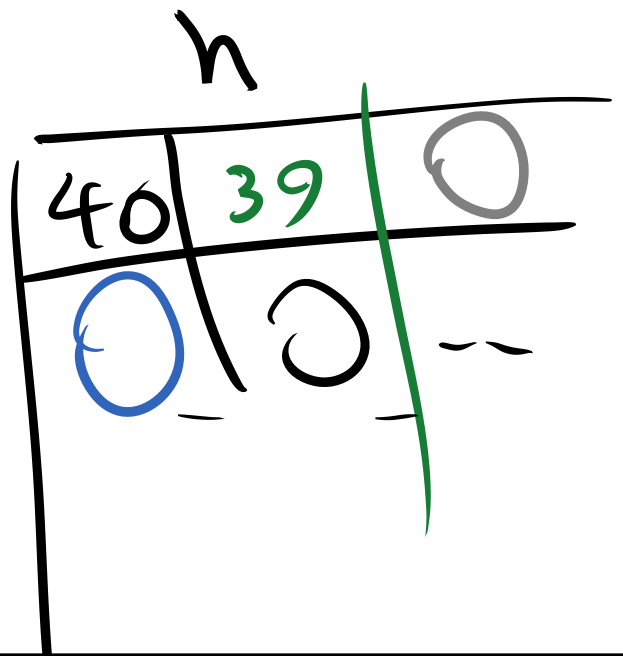
$2\times1+3\times1+4\times0+1\times0$

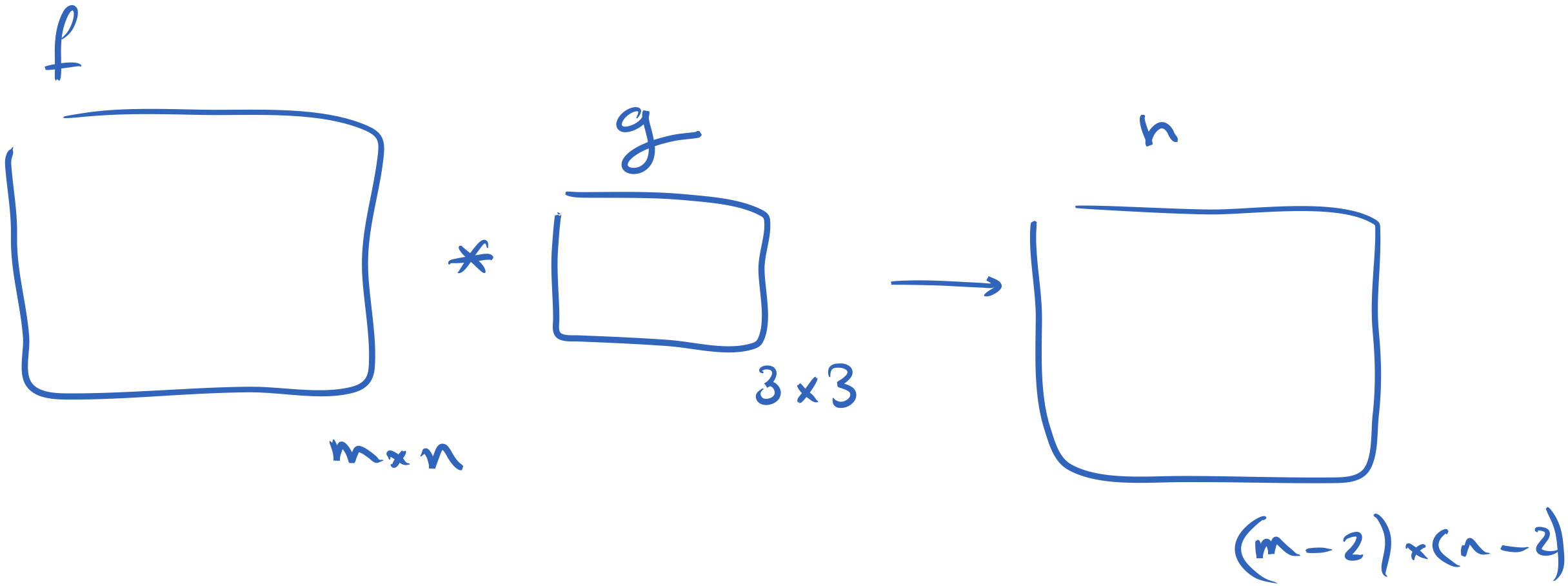
$+1\times5+9\times2+1\times1+4\times0+11\times1$

$3\times1+4\times1+6\times0+$

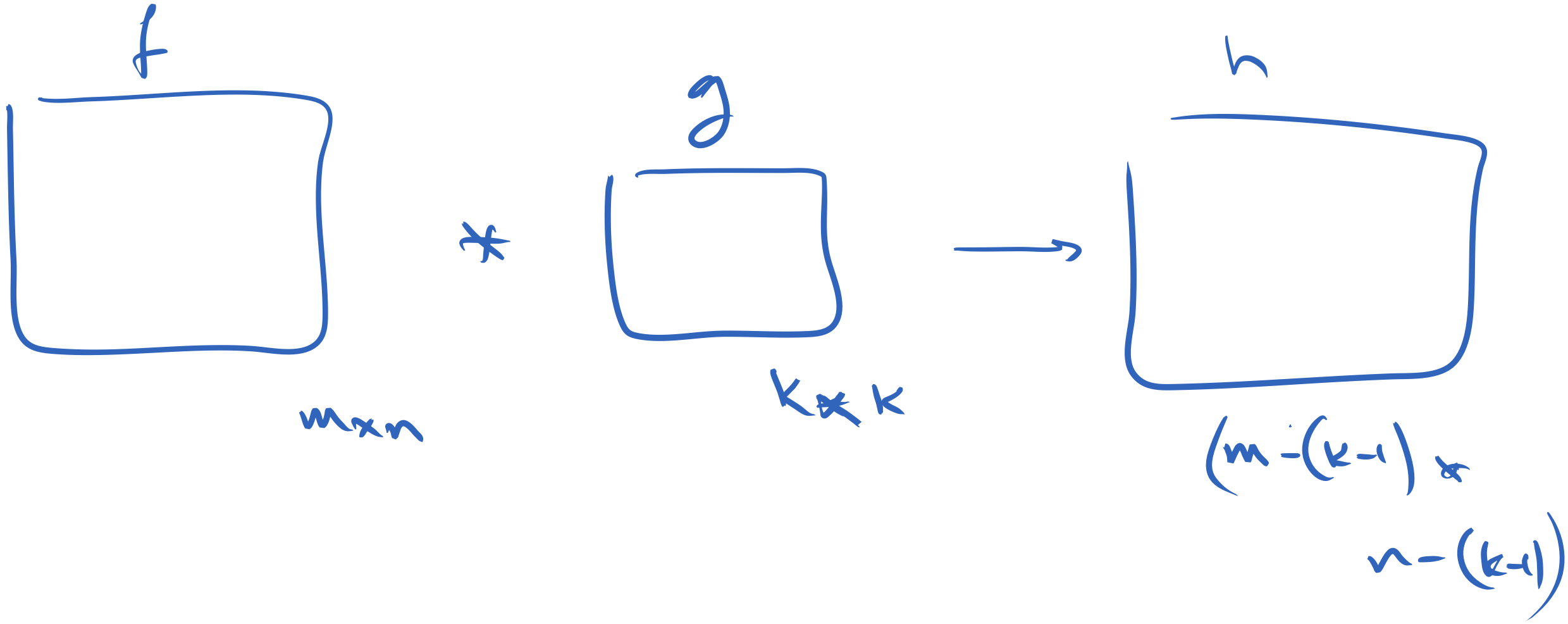
$5\times0 = 39$

$= 40$

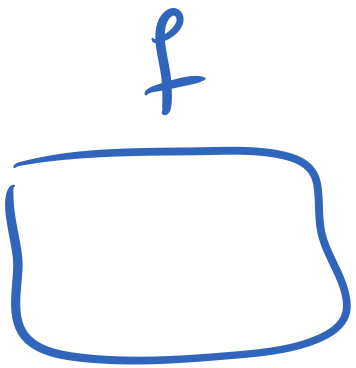


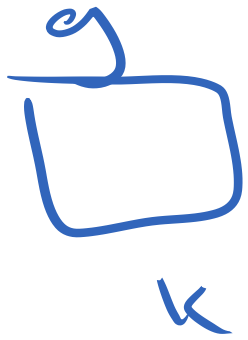


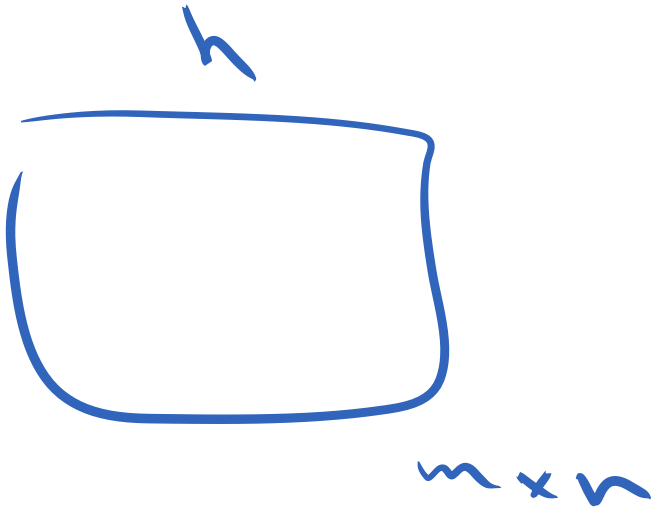
Valid

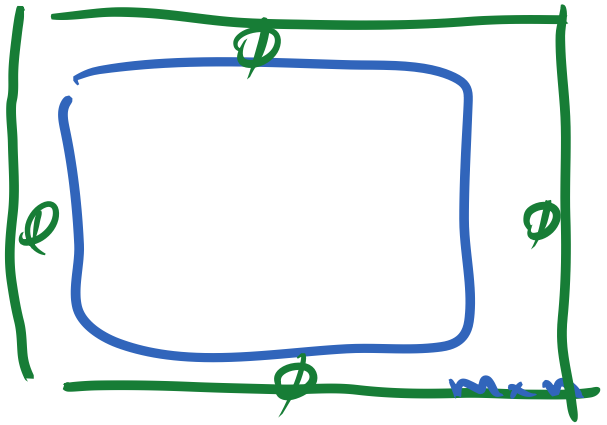

f
m x n
*
g
k * k
h
(m-(k-1)) x
n-(k-1)

Same



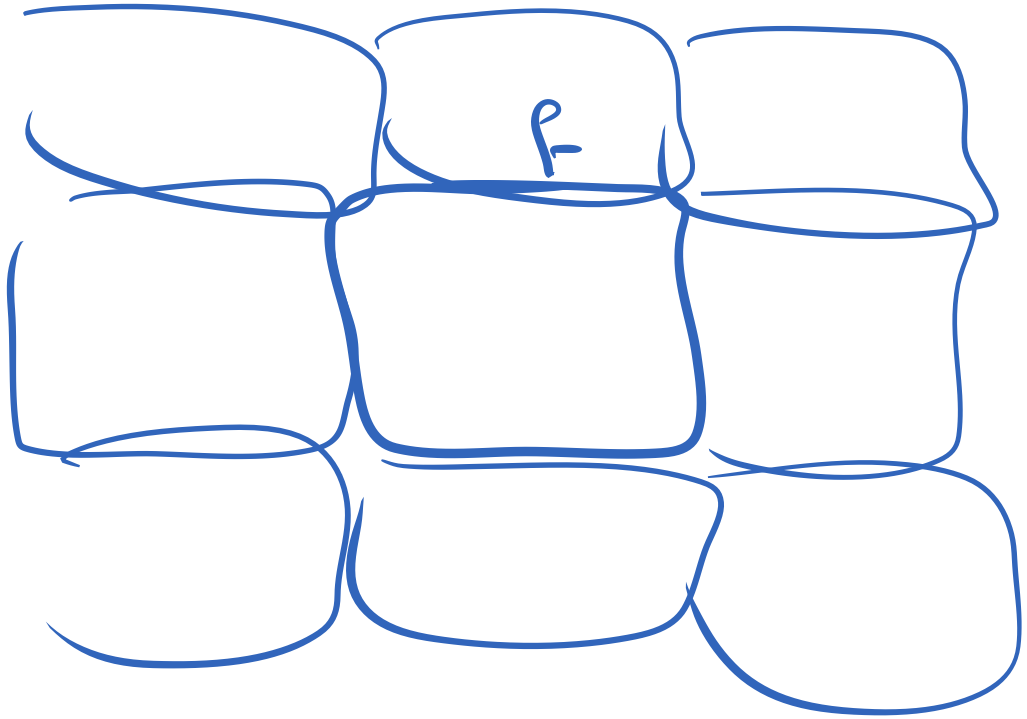


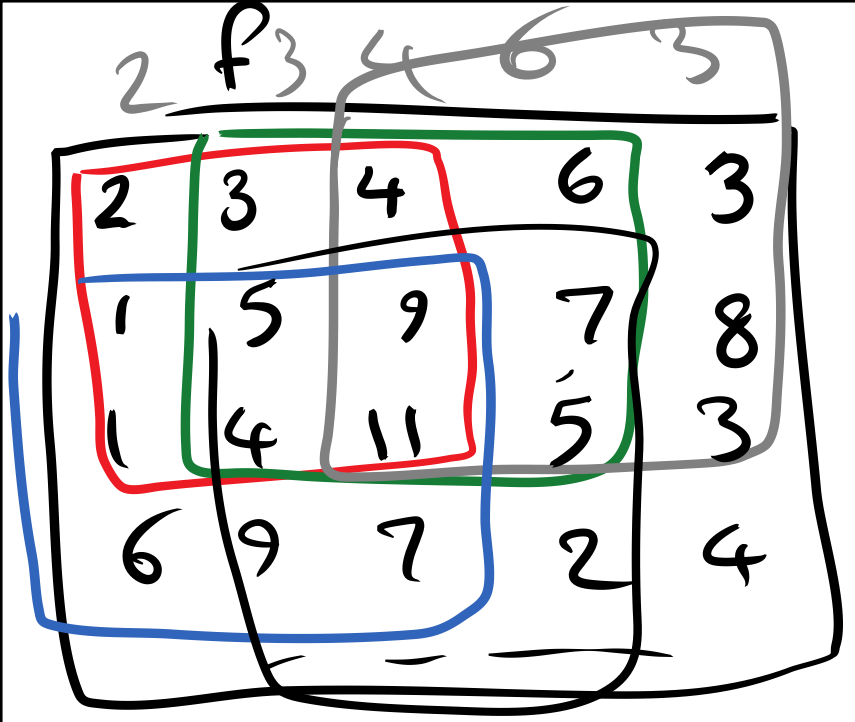




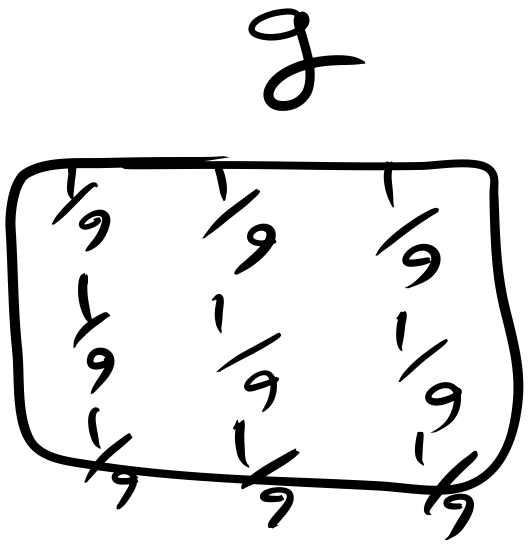
m x n

3 x 3





$*$



h

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

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