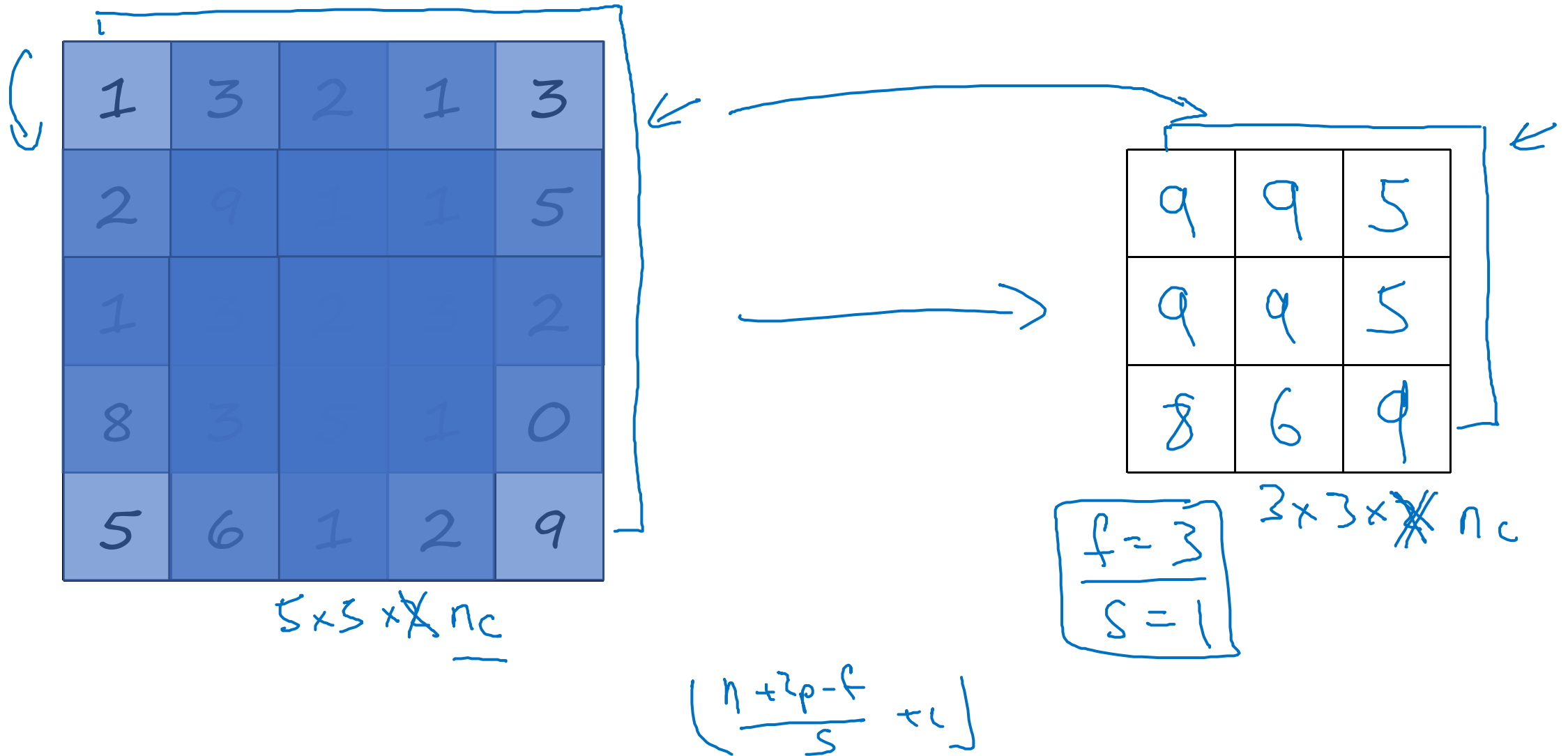deeplearning.ai

Convolutional Neural Networks

Pooling layers

Pooling layer: Max pooling

1	3	2	1
2	9	1	1
1	3	2	3
5	6	1	2

Pooling layer: Max pooling

$5 \times 5 \times n_c$

$3 \times 3 \times n_c$

$$\frac{f = 3}{s = 1}$$

$$\left(\frac{n + 2p - f}{s} + 1 \right)$$

Andrew Ng

Pooling layer: Average pooling

$f = 2$

$s = 2$

$7 \times 7 \times 1000 \longrightarrow 1 \times 1 \times 1000$

Andrew Ng

Summary of pooling

Hyperparameters:

f : filter size

s : stride

Max or average pooling

$f=2, s=2$

$f=3, s=2$

$\rightarrow$ ~~p : padding~~

No parameters to learn!

$$n_H \times n_W \times n_C$$

$$\downarrow$$

$$\left\lfloor \frac{n_H - f}{s} + 1 \right\rfloor \times \left\lfloor \frac{n_W - f}{s} + 1 \right\rfloor$$

$$\times n_C$$