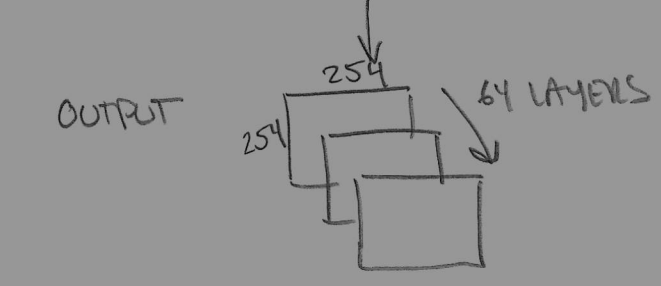
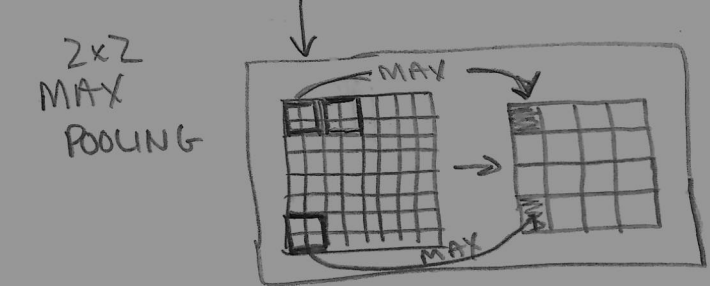
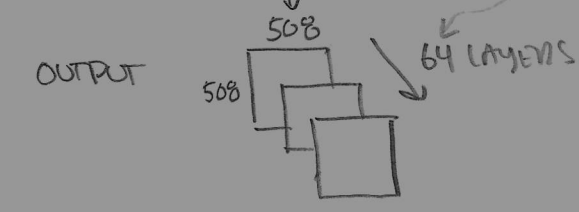
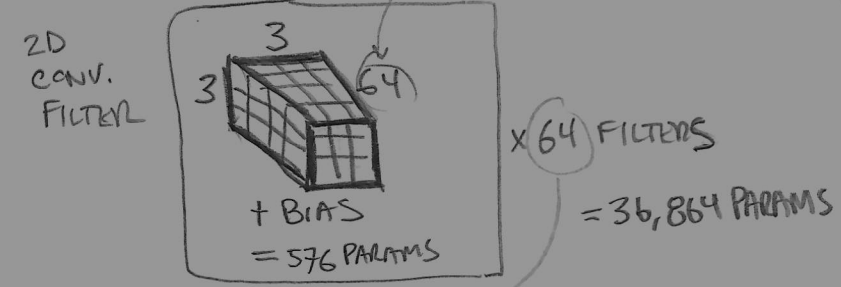
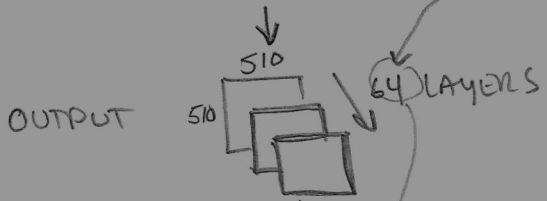
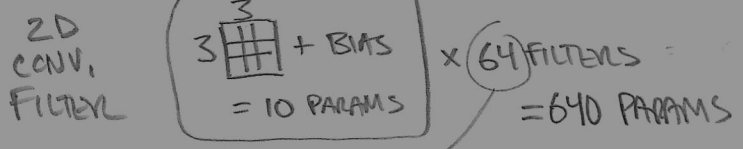
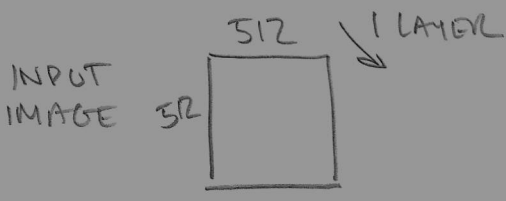
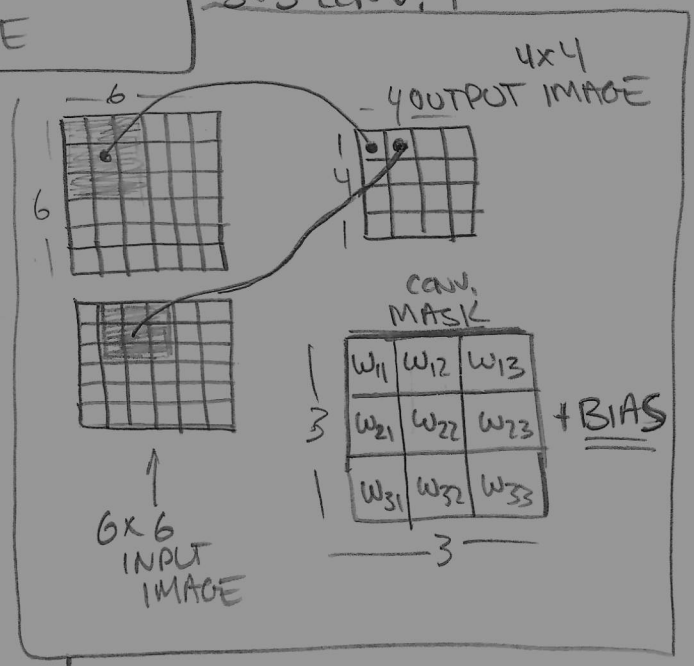


CNN + MAX POOLING EXAMPLE

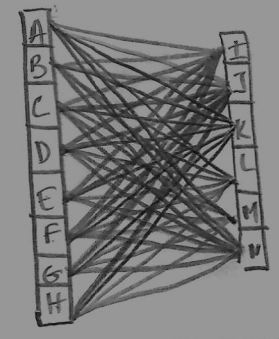
3x3 CONV.



ETC...



"EQUIVALENT" DENSE (OR FULLY-CONNECTED) LAYER



EACH EDGE GETS A "WEIGHT" THEN A BIAS IS ADDED TO EACH OUTPUT...

$$I = Aw_1 + Bw_2 + \dots + Hw_8 + \overbrace{b}^{\text{BIAS}}$$

SO TO GO FROM 510x510x64 TO 508x508x64

PARAMS =

$$(510 \times 510 \times 64) \times (508 \times 508 \times 64) + (508 \times 508 \times 64)$$

$$= 2.749 \times 10^{14} \text{ PARAMS!}$$

SO THE CONVOLUTION LAYER USES 10 ORDERS OF MAGNITUDE FEWER PARAMETERS *

USUALLY

