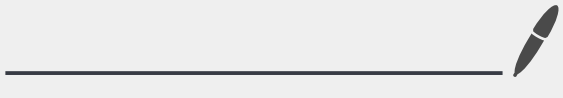
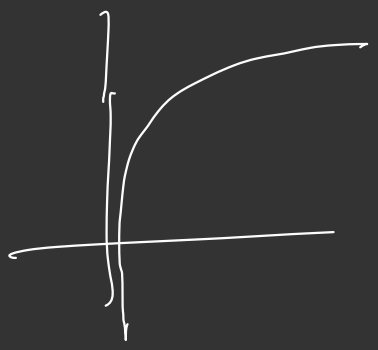


- UNET : No BN layer at initial phase. why?

- intiution : can we add [Reg loss + CE loss] ?
  - Reg loss → normal scale
  - CE loss → log scale

- conditional GANs : and. pix2pix ?

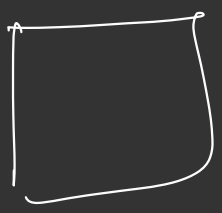


Disc- (0) Real / (1) Fake → 50% → loss ?

$$y_i \log(p_i) + (1-y_i)\log(1-p_i) = 1.\log(1)$$

$$\log(D) = \infty \Rightarrow D = 0$$

$$\log(1-D) = 0 \Rightarrow$$



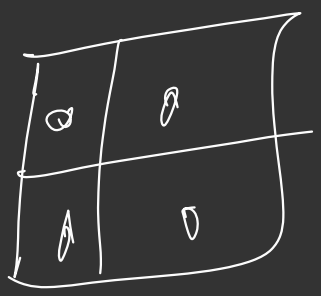
int $[0, 255] \rightarrow$ float

int → uint8 (0, 255)

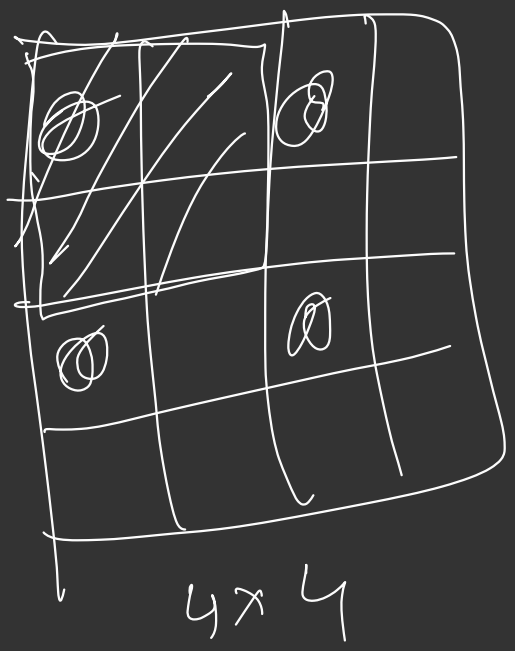
float → (0, 1)

$$\frac{(0, 255) - 127.5}{(127.5)}$$

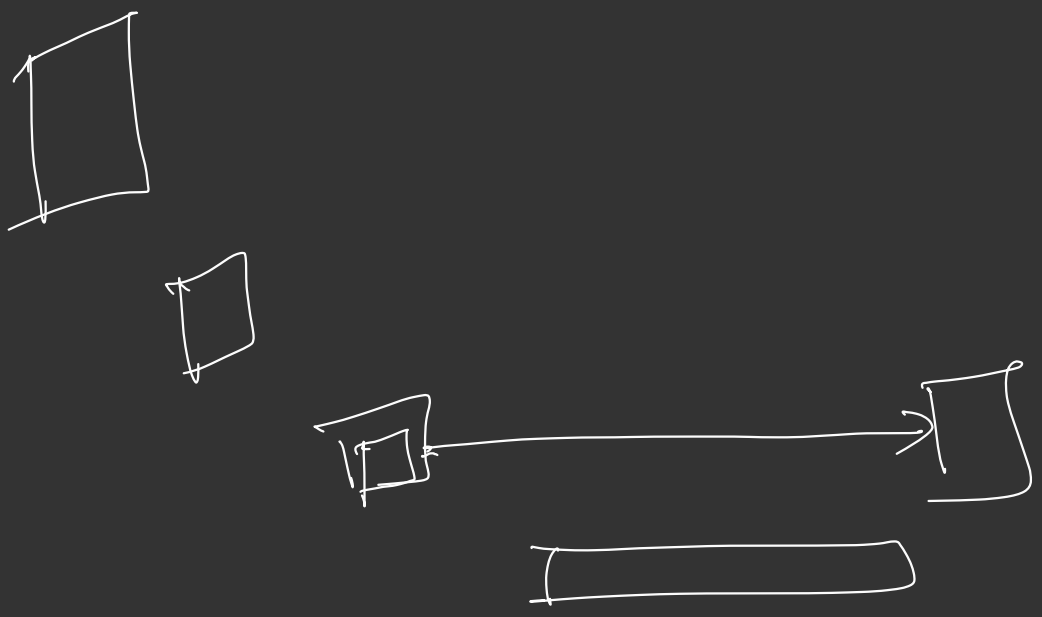
$$\frac{(-127.5, 127.5)}{127.5} = (-1, 1)$$



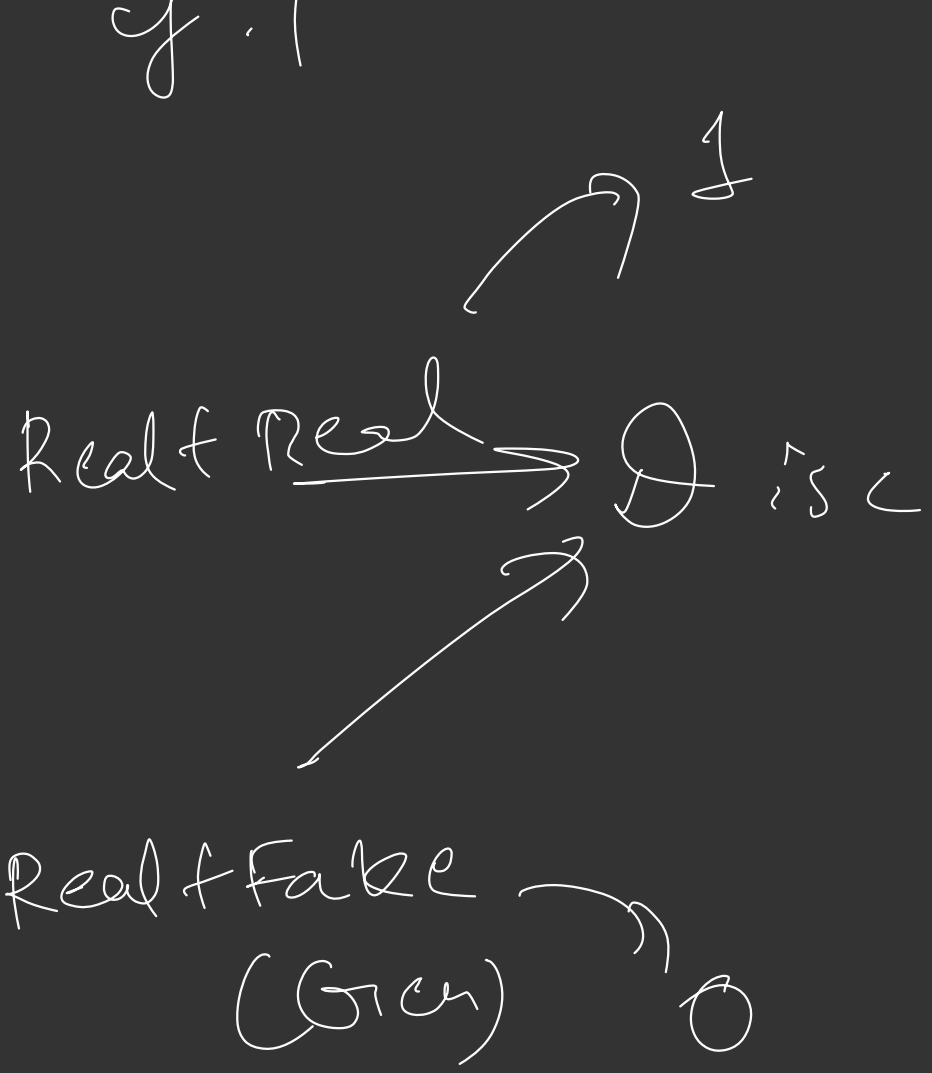
2×2

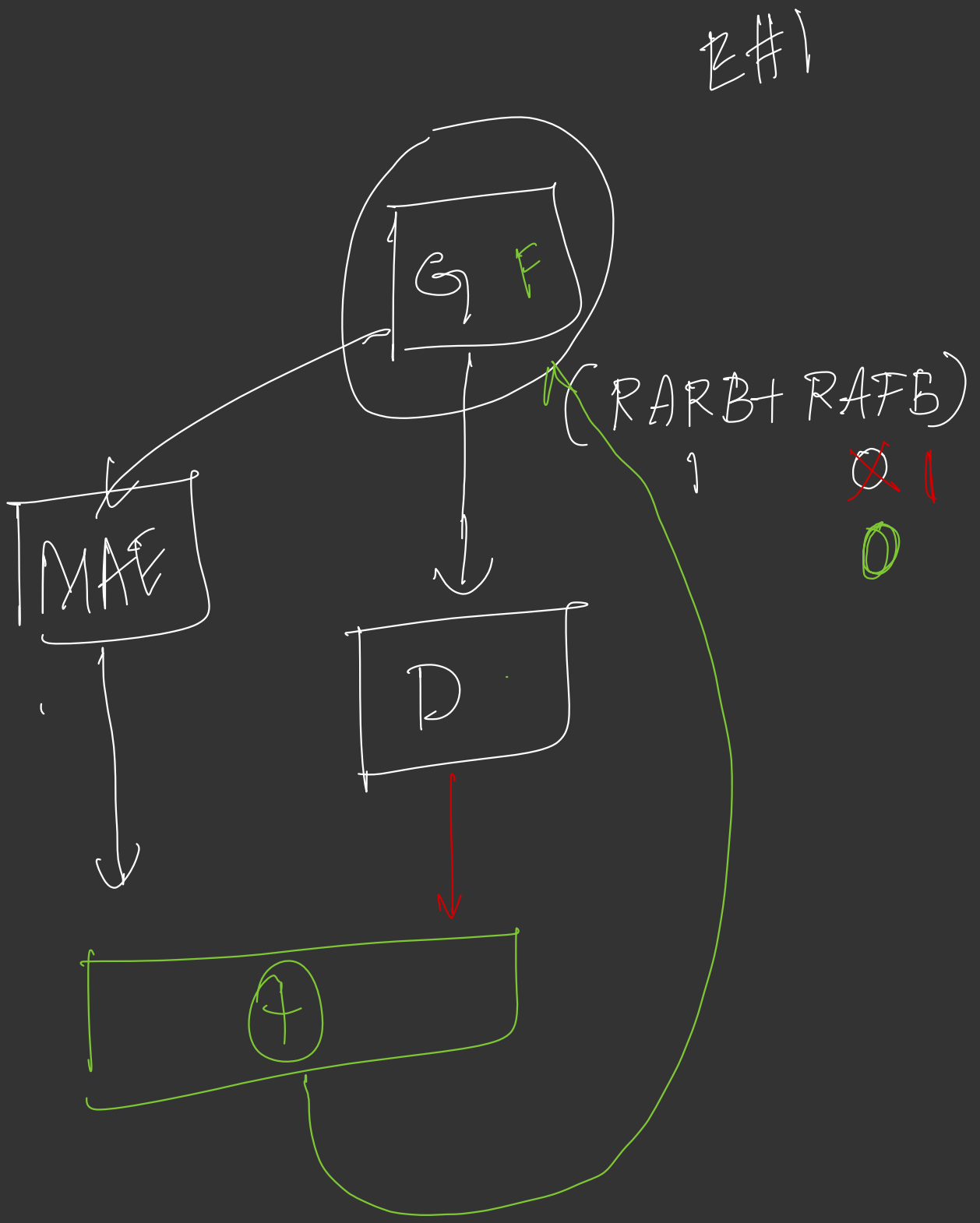


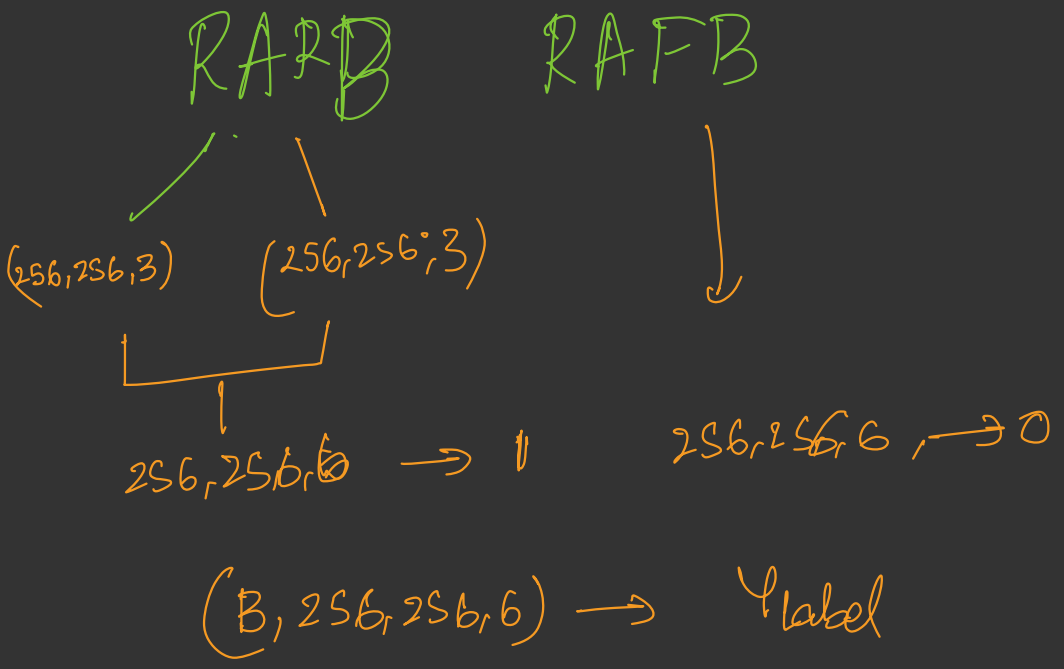
4×4



cond → Gen


y : 1
1
Real
Real
D
is
Real + Fake
(G(z))
0


E#1
G F
(RARB+ RAFB)
1
0 1
0
MAE
D
t



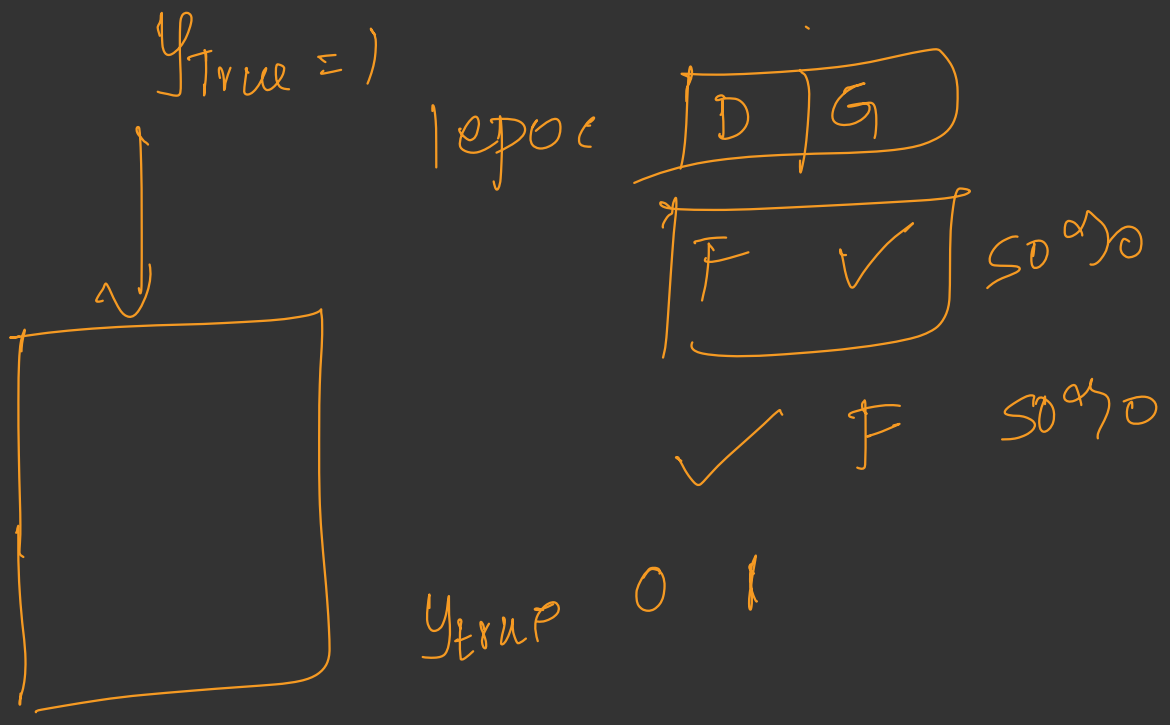
256,256,6 → 1 256,256,6, → 0

(B, 256, 256, 6) → Ylabel

219200×10^{-3} S

~~219.2 S~~

219200 mS

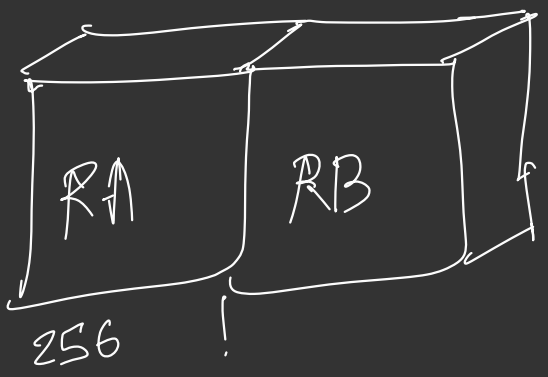


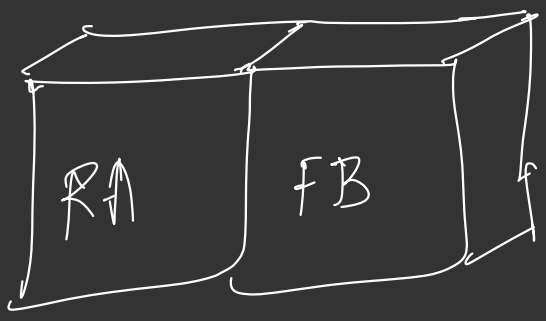
$$y_i \log(y_i) + (1-y_i)\log(1-y_i) \to 0$$

$$-\Sigma \log(y_{pred})$$

0.5, 0.15 | 0.9, 0.88

$$y_i \log(y_i) + (1-y_i)\log(1-y_i)$$

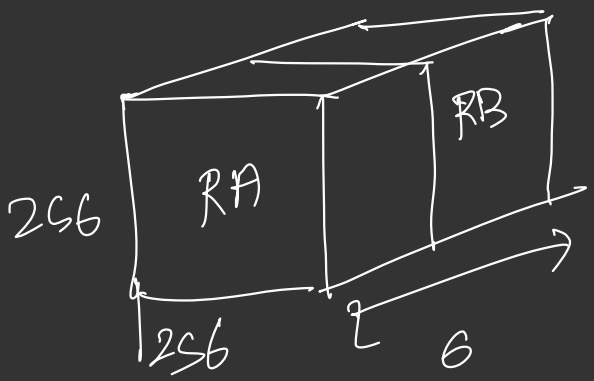




Padding = "SAME"

i/p shape = o/p shape iff stride = 1

$$\left\lfloor \frac{n+2p-f}{s} + 1 \right\rfloor$$



#1 —, 256, 256, 6 → max 1 min 0

#2 —, 128, 128, 64

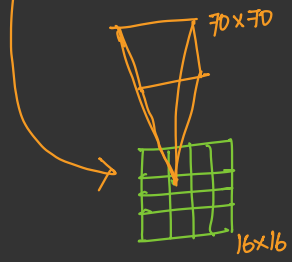
#3 —, 64, 64, 128 0.2 — 0

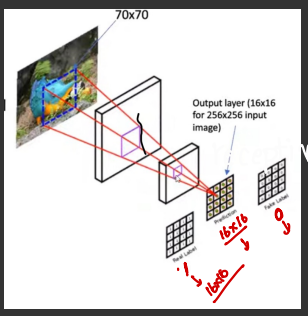
#4 —, 32, 32, 256

#5 —, 16, 16, 512

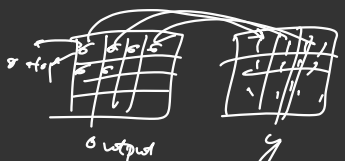
#6 —, 16, 16, 512

#7 —, 16, 16, 1





receptive field = (o/p_size - 1) * stride + kernel_size



...

Receptive field calculation in a PatchGAN

6.1.2 Discriminator architectures

The 70 × 70 **discriminator** architecture is:
C64-C128-C256-C512

After the last layer, a convolution is applied to map to a 1-dimensional output, followed by a Sigmoid function. As an exception to the above notation, BatchNorm is not applied to the first C64 layer. All ReLUs are leaky, with

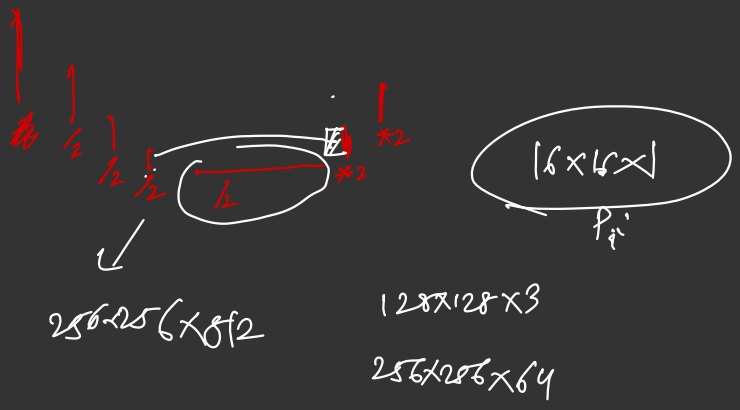
follow the same basic architecmodify the receptive field size:

pecial case, all convolutions are

C64-C128

receptive field = (output size – 1) * stride + kernel size

C64: 34x34 out, 2x2 stride, 4x4 kernel	rf = (34-1)*2 + 4 = **70**
C128: 16x16 rf, 2x2 stride, 4x4 kernel	rf = (16-1)*2 + 4 = **34**
C256: 7x7 rf, 2x2 stride, 4x4 kernel	rf = (7-1)*2 + 4 = **16**
C512: 4x4 rf, 1x1 stride, 4x4 kernel	rf = (4-1)*1 + 4 = **7**
Last Layer: 1x1 out, 1x1 stride, 4x4 kernel	rf = (1-1)*1 + 4 = **4**


1/2
1/2
1/2
*2
*2
16×16×1
Pi
256×256×512
128×128×3
256×256×64