AlexNet Program 2 Diagrams

Layer 1:

Stride 4
Padding 0
Kernel Size 11

224
224
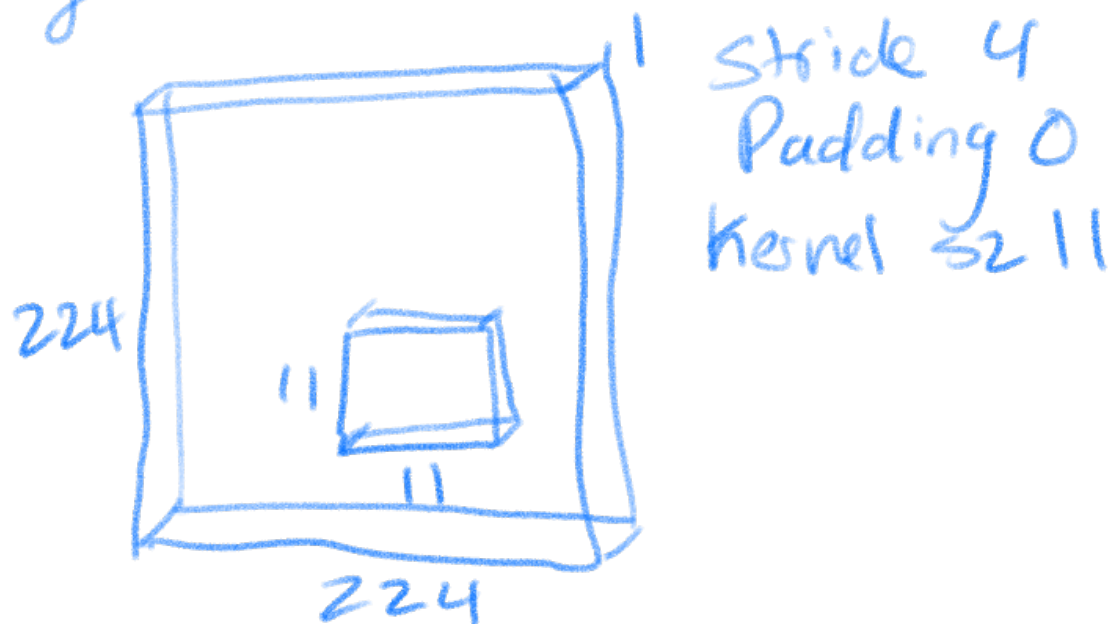
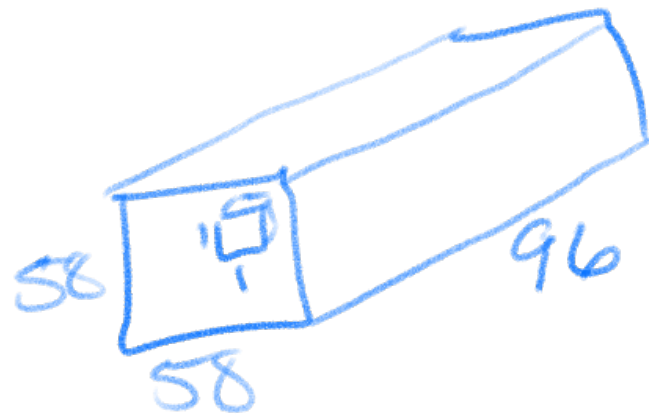$$\text{Output size} = \lfloor (224 - 11 + 0)/4 + 1 \rfloor = 54$$

Layer 2:

96
54
54

Stride 1
Padding 2
Kernel size 1
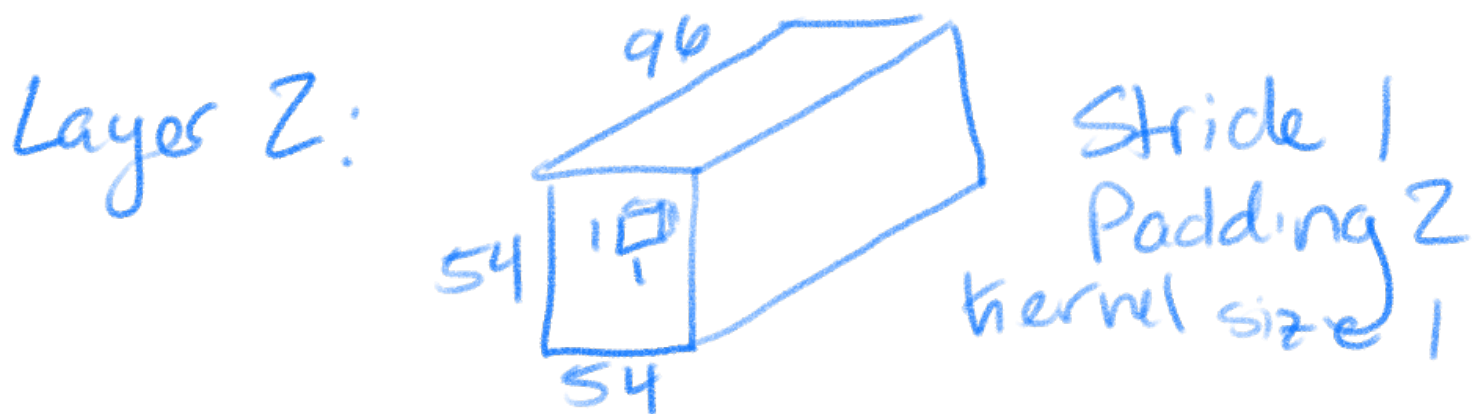
$$\text{Output size} = \lfloor (54 - 1 + 2 \cdot 2)/1 + 1 \rfloor = 58$$

Layer 3:

Stride 1
Padding 0
kernel 1
size

58 · 58 · 58 · 96

$$\text{Output size} = \lfloor (58 - 1 + 0)/1) + 1 \rfloor$$
$$= \lfloor 57 + 1 \rfloor = 58$$
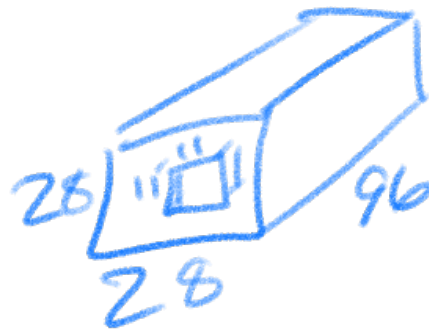
Layer 3 Max Pool:

Stride 2
Padding 0
kernel size 3

58 · 3 · 3 · 58 · 96

$$\text{Output size} = \lfloor (58 - 3 + 0)/2 + 1 \rfloor$$
$$= \lfloor 28.5 \rfloor = 28$$

e.g.

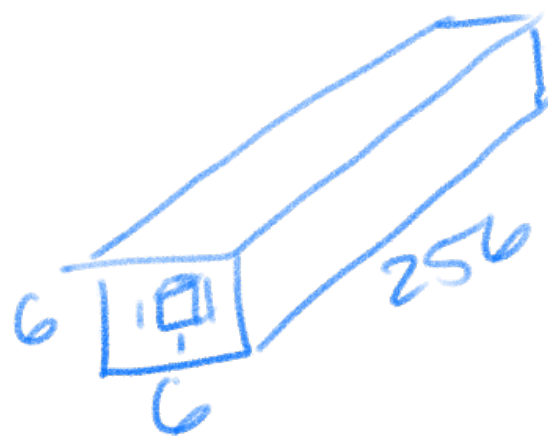| 10	2	4
6	5	0
3	9	7

→ 10

Layer 4

Stride 4
padding 2
kernel size 11

28 · 28 · 96

$$\text{Output size} = \lfloor (28 - 11 + 4)/4 + 1 \rfloor$$
$$= 6$$

Layer 5

Stride 1
padding 0
kernel size 1

6 · 256

6

Output size $= \lfloor (6-1+0)/1 + 1 \rfloor$

$= \lfloor 5 + 1 \rfloor = 6$

Layer 6

Stride 1
padding 0
kernel size 1

6 · 256

6

Output size $= \lfloor (6-1+0)/1 + 1 \rfloor$

$= 6$

Layer 6 MaxPool

Stride 2
padding 0
kernel size 3

6 · 256

6
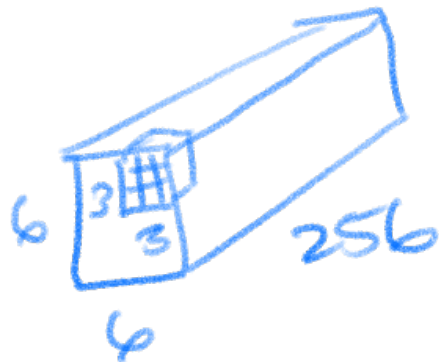
Output size $= \lfloor (6-3+0)/2 + 1 \rfloor$

$= \lfloor 2.5 \rfloor = 2$

Layer 7

*kernel size
bigger than
data
width*height 2
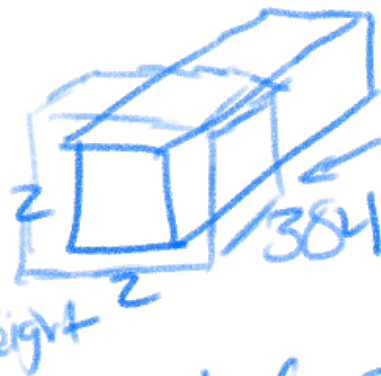
kernel 3×3×1   Stride 1
padding 1
kernel size 3
38×1

Output size $= \lfloor (2-3+2)/1 +1 \rfloor$
$= 2$

Layer 8

2   2
2   38×1
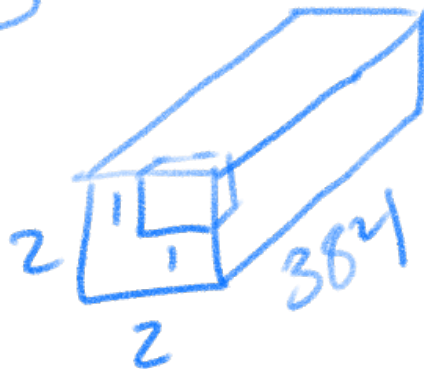
Stride 1
padding 0
kernel size 1

Output size $= \lfloor (2-1+0)/1+1 \rfloor$
$= 2$

Layer 9
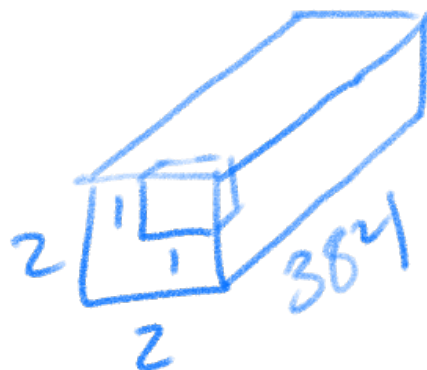
2   2
2   38×1

Stride 1
padding 0
kernel size 1

Output size $= 2$

Layer 10   Fully Connected Linear

Input is $2 \cdot 2 \cdot 384$

Output is 4096

4096

Layer 11   Fully Connected Linear
Input is 4096
Output is 4096

4096

Layer 12   Fully Connected Linear
Input is 4096
Output is 10

# of classes we are testing for is 10