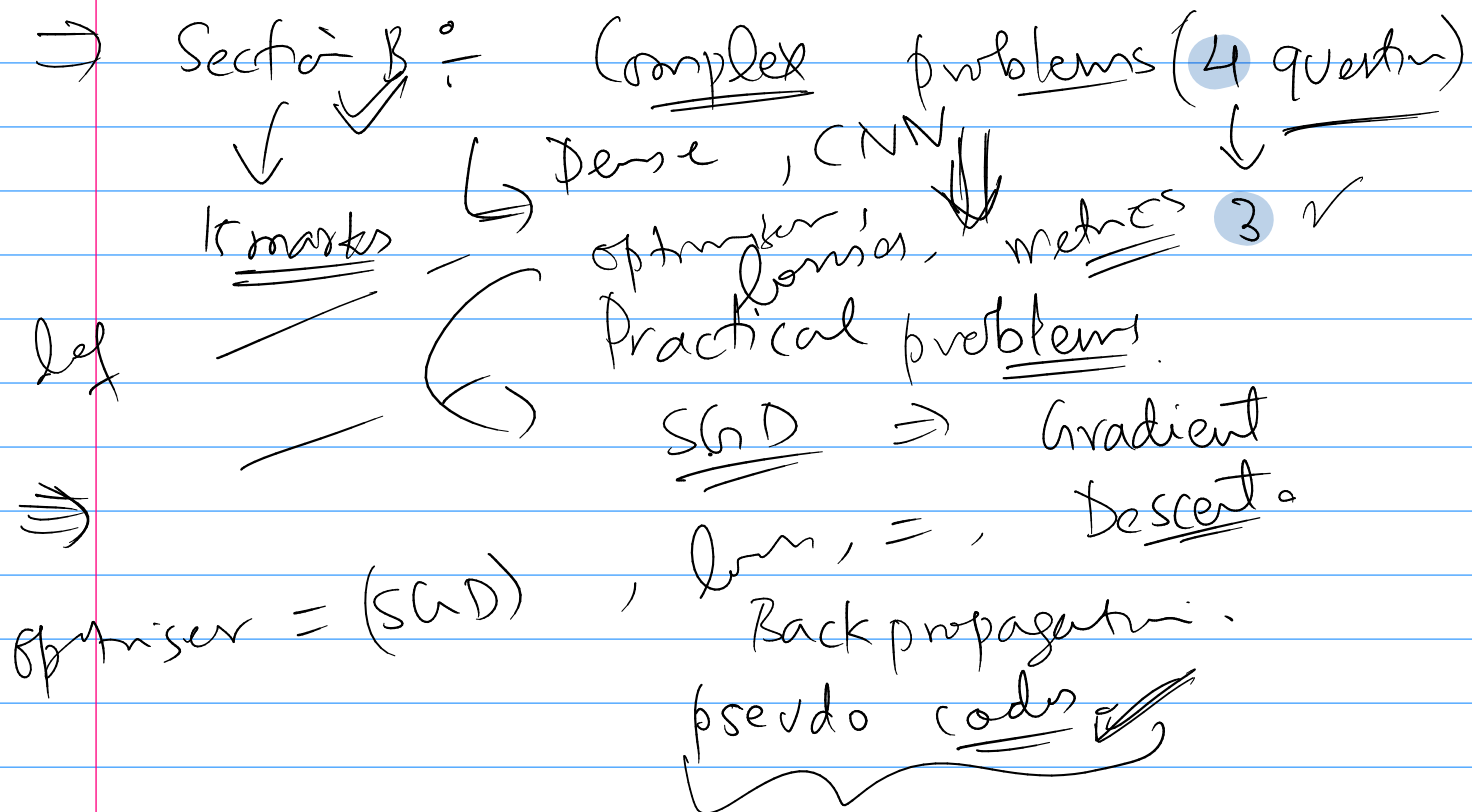
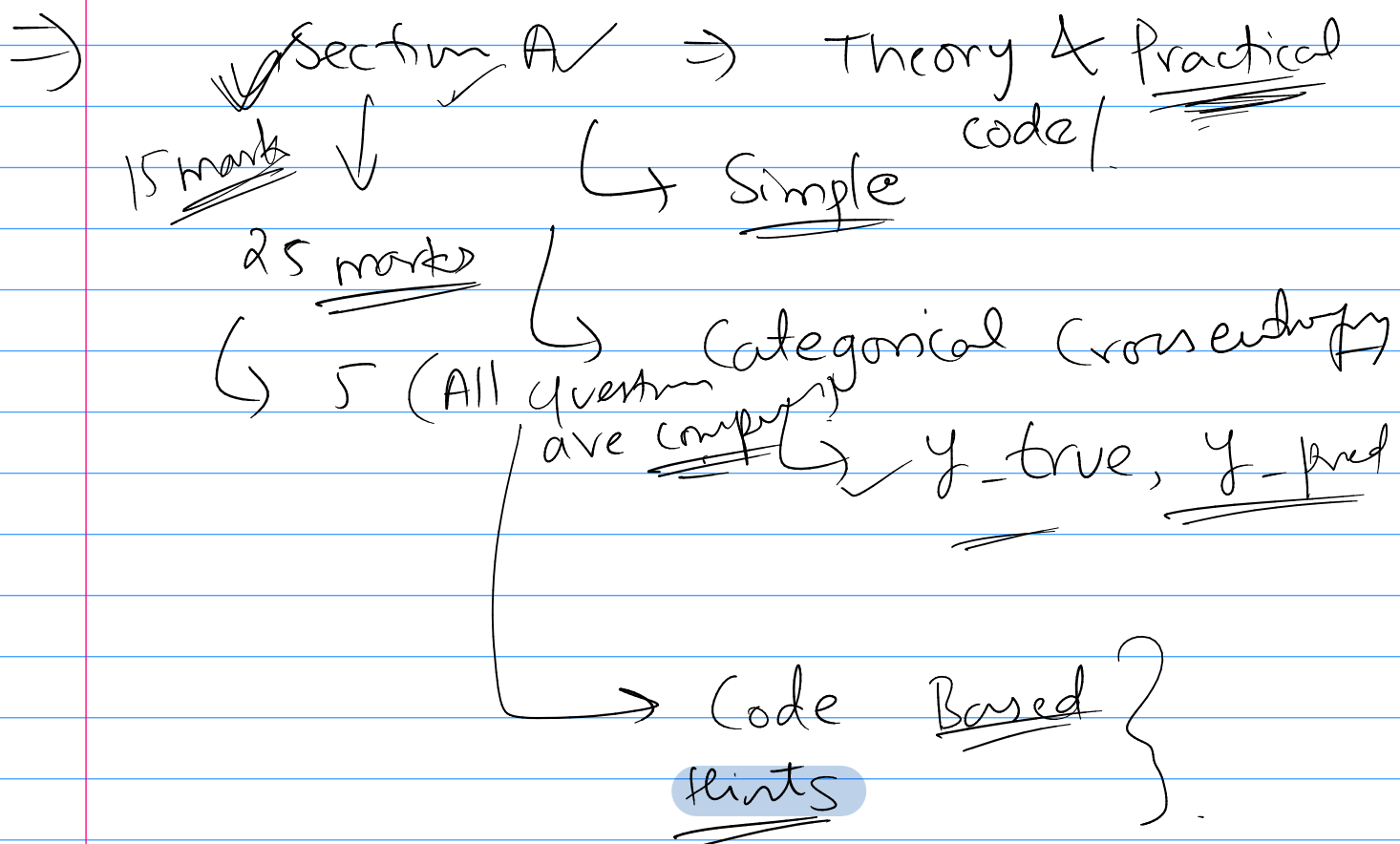
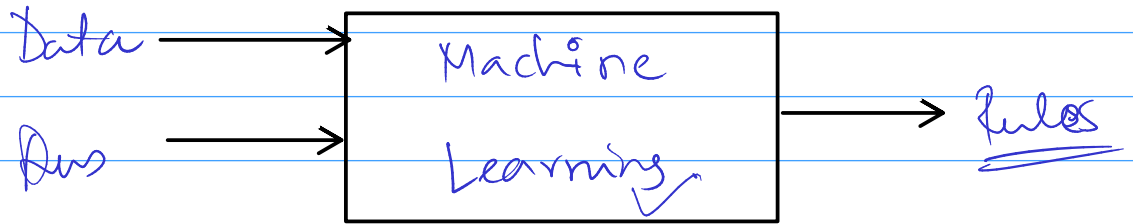
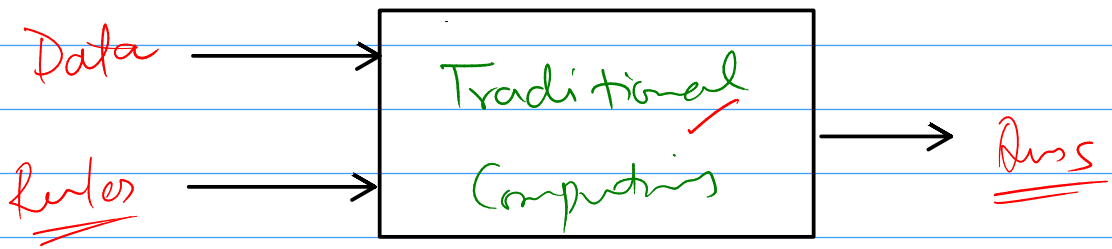


⇒ Question Paper : Section A, B.



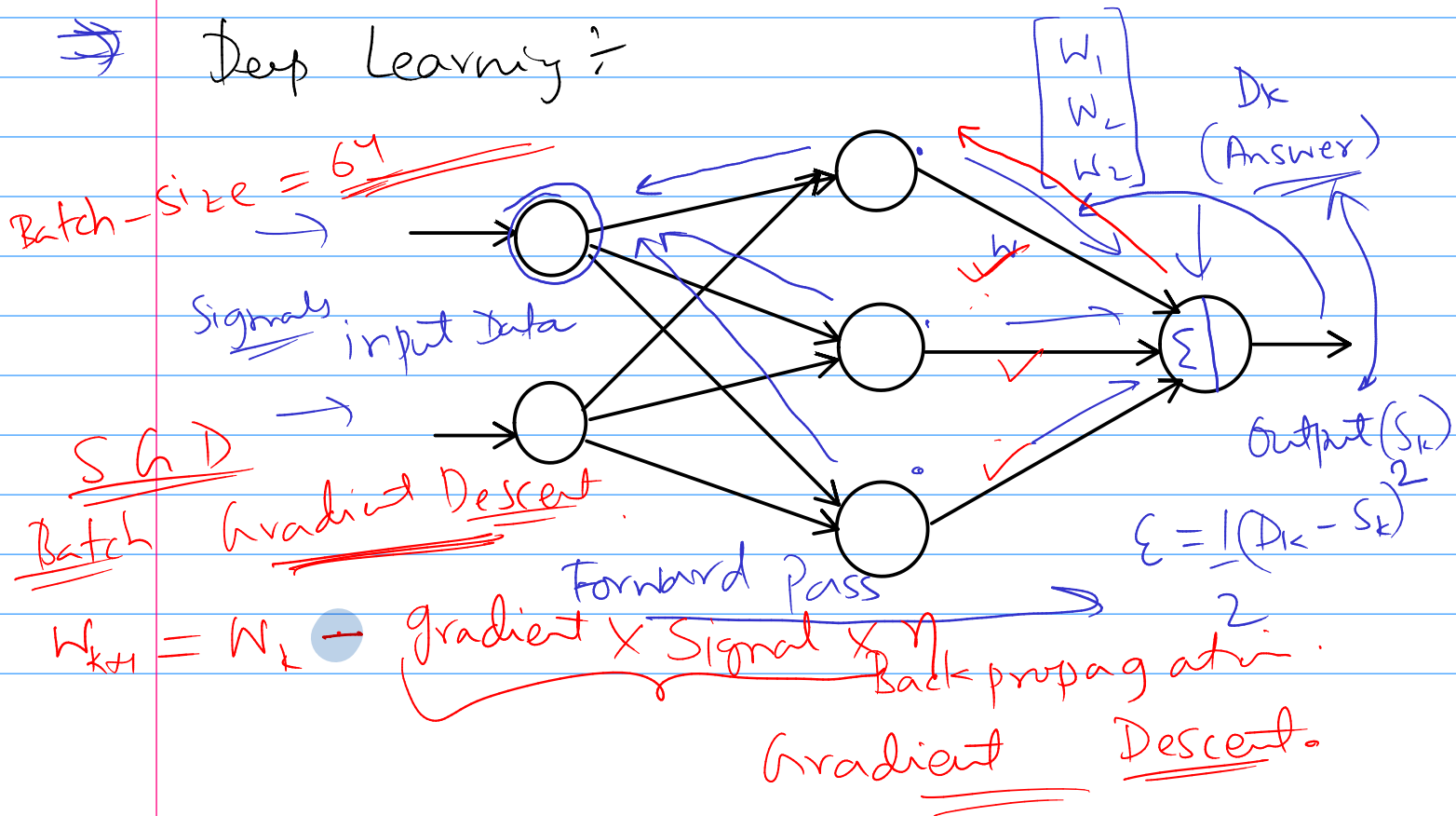
⇒ Revision :-

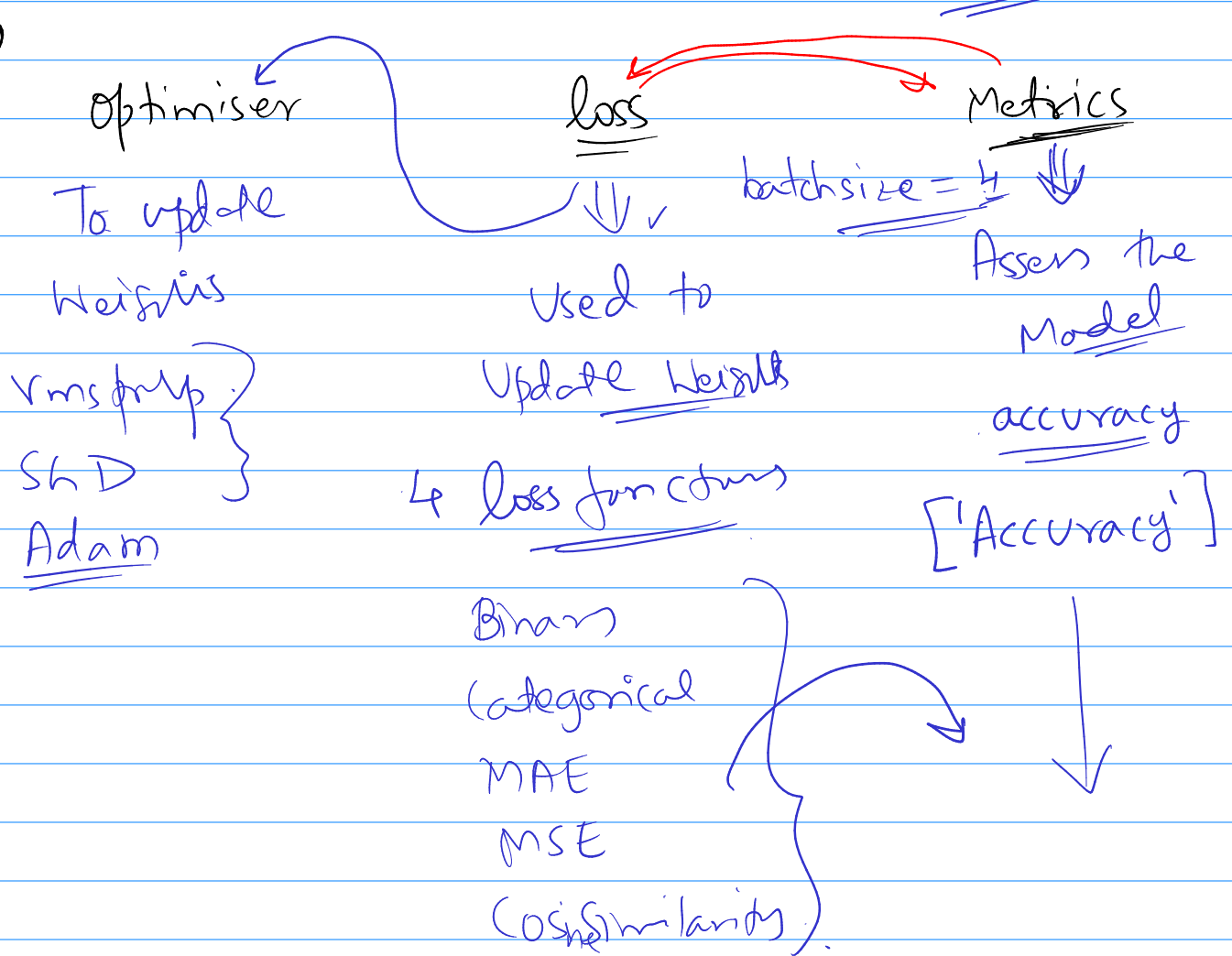
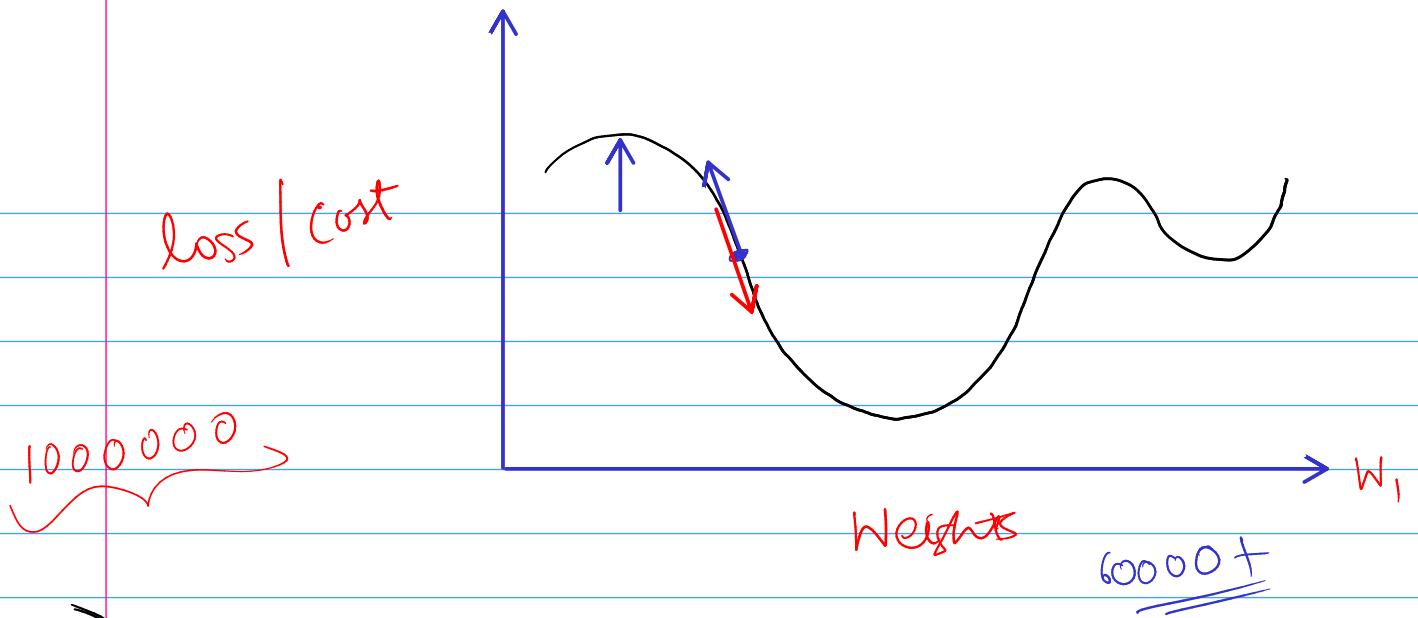
if else
for loops.



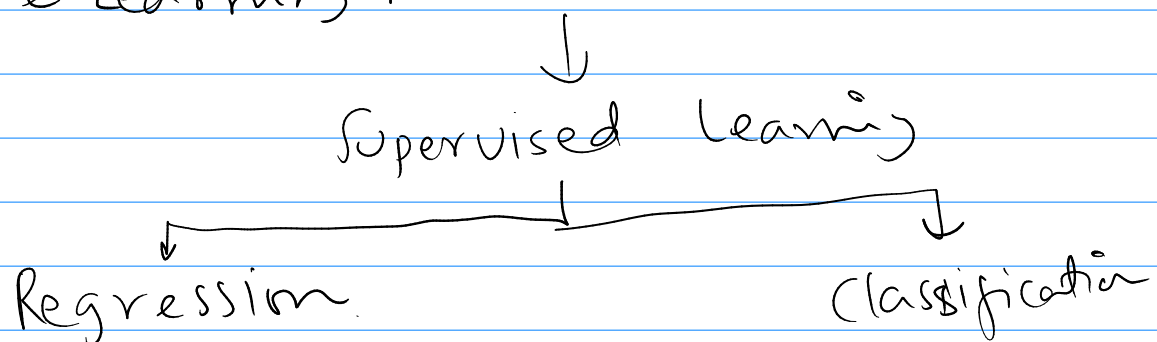
You are also
Deep Neural Network.
Brain ✓ trillions of
Neurons.
↳ Trained

⇒ Deep Learning :-





Machine Learning :-

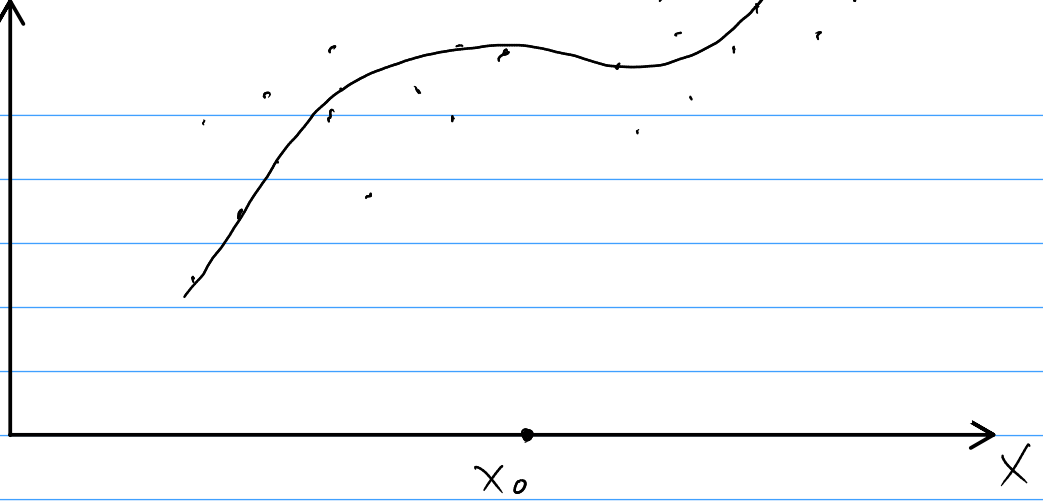


Regression \Rightarrow

Curve fitting

loss function \Rightarrow

- mse ✓
- cosine similarity ✓
- mae ✓



metrics \Rightarrow mae, mse

\Rightarrow Classification problems \div

Binary
 \Downarrow

$0 \Rightarrow 0$
 $0 \Rightarrow 1$ }

Categorical
problems

relu ✓

sigmoid ✓ \Rightarrow Binary
(cross entropy)

linear

Softmax

$$L = -\sum (y_{true} \ln y_{pred} + (1 - y_{true}) \ln (1 - y_{pred}))$$

acti. Softmax
 \downarrow

Categorical -
cross entropy -

$$[L = -\sum y_{true} \ln y_{pred}]$$

$$y_{pred} \approx 1$$

$$\ln y_{pred} \approx 0$$

$$y_{pred} \approx 0$$

$$\ln y_{pred} \approx -\infty$$

\Rightarrow

⇒ Keras : ✓
Tensor : ✓ . loss .

⇒ Convolutional Neural Network ✓
 Image Data -
 Sample, (height, width, channels)
 Sample, Integer Integer 3
 100 X 100 X 3 gray 1.
 X (100 X 100) X 1
 Sample, frame, h, w, nc

0.5	0.4	0.3		
0.7	0.5	0.2		
0.8	0.9	0.7		

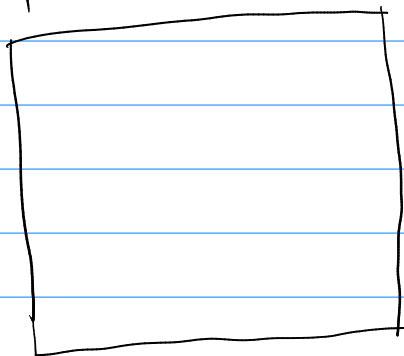
1	1	1
1	1	1
1	1	1

2, 2.
 (3, 3) ✓
 (5, 5) ✓
 (7, 7)

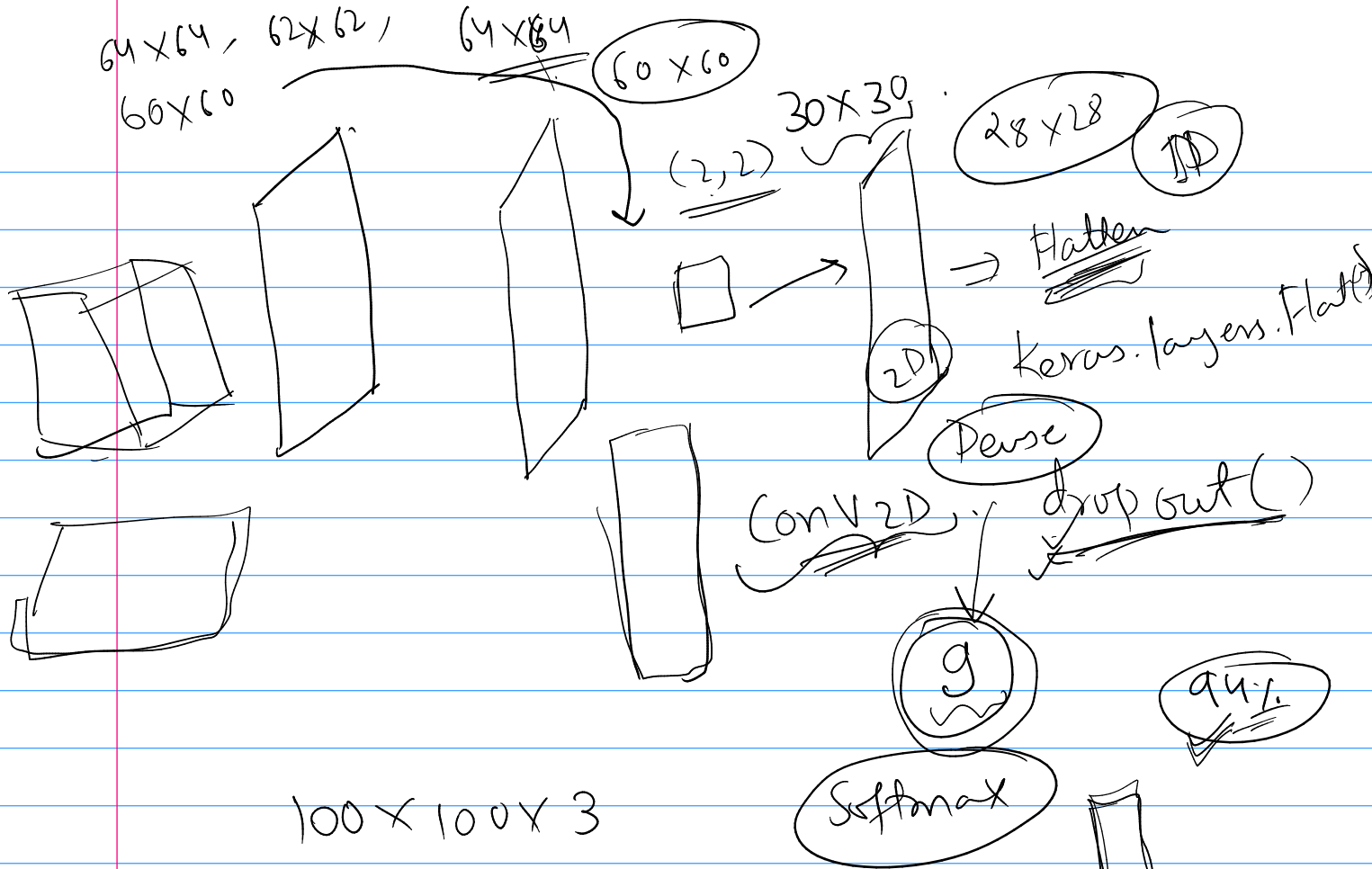
x	y	z
a	b	c
d	e	f

(Max pooling) ✓

⇒



of trainable parameters is very large.



input shape $\Rightarrow (w, h, nc)$

Dense $\Rightarrow ((), nc)$

input_shape = $(100, 100, 3)$
 $\Rightarrow (100, 100, 1)$