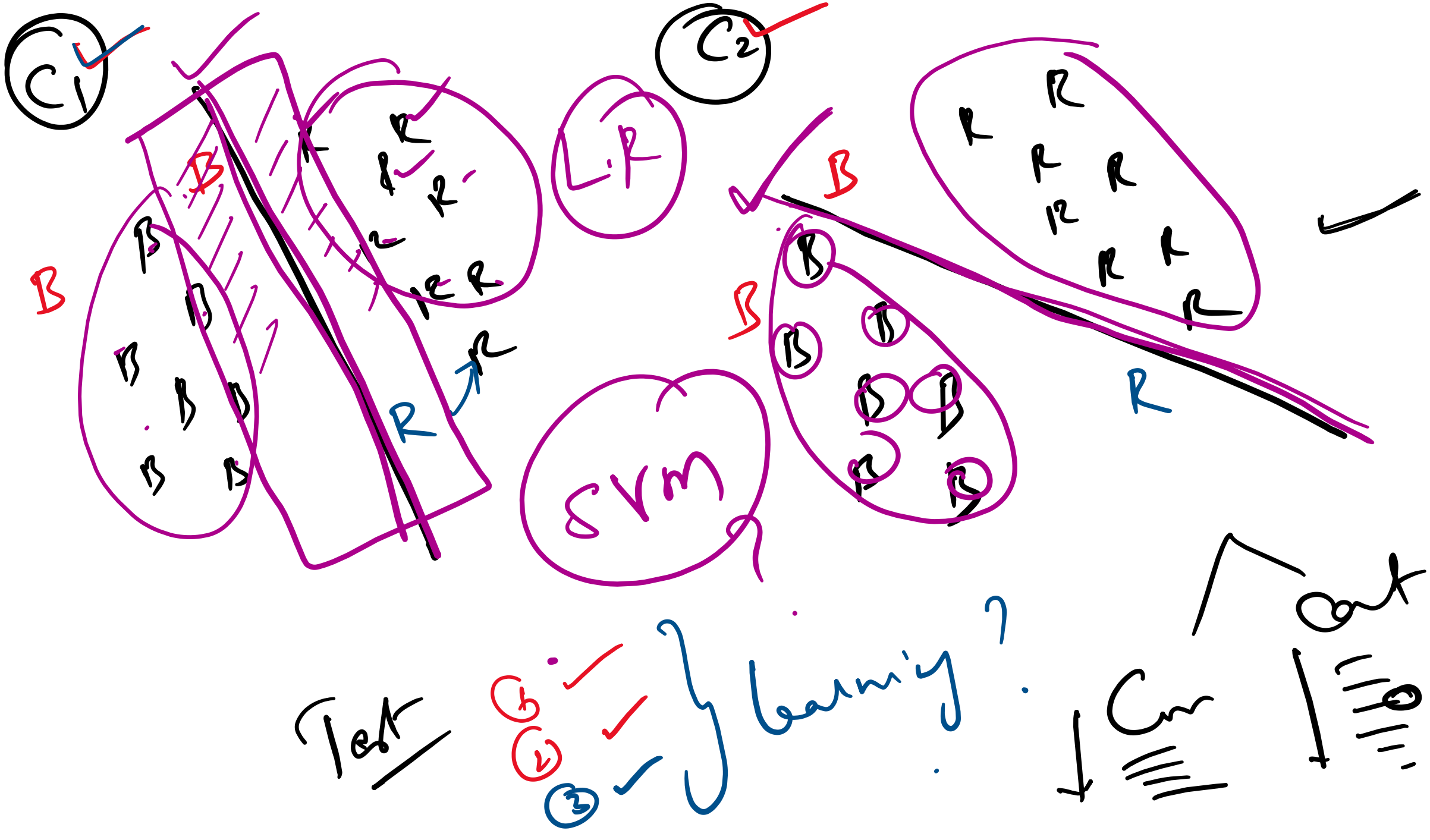
Summary:

1. Base of SVM → Log Regression
2. Hyperplane → Expand the margin
3. Coeff of x & y change the slope
4. Expansion Rate
5. SVM → C.E + M.E
6. G.d → $a \rightarrow a - \eta * \frac{de}{da} = a(1-2\eta)$

$b \rightarrow b - \eta * \frac{de}{db} = b(1-2\eta)$

7. 'C' parameter

DATA


C1
C2
LR
SVM
B
R
Test
Learning?
Out

LHS RHS

$2x + 3y + (-6) = 0$

$2x + 3y = 6$

$2x = 6$

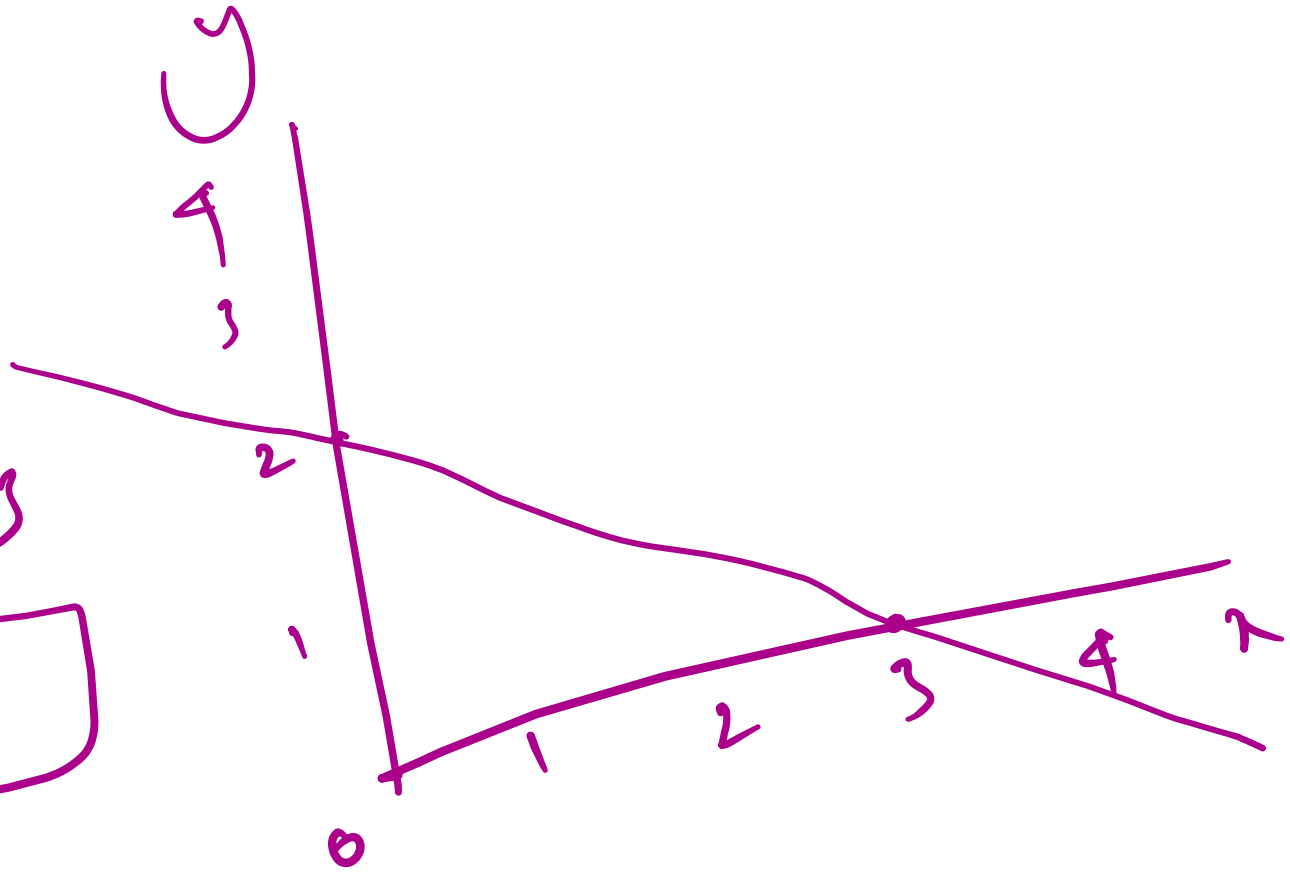
$x = 6/2 = 3$

$x = 3$

$3y = 6$

$y = 6/3$

$y = 2$



$2x + 3y - 6 = 0$ ① → Eqn

$2x + 3y = 7$

$2x = 7$

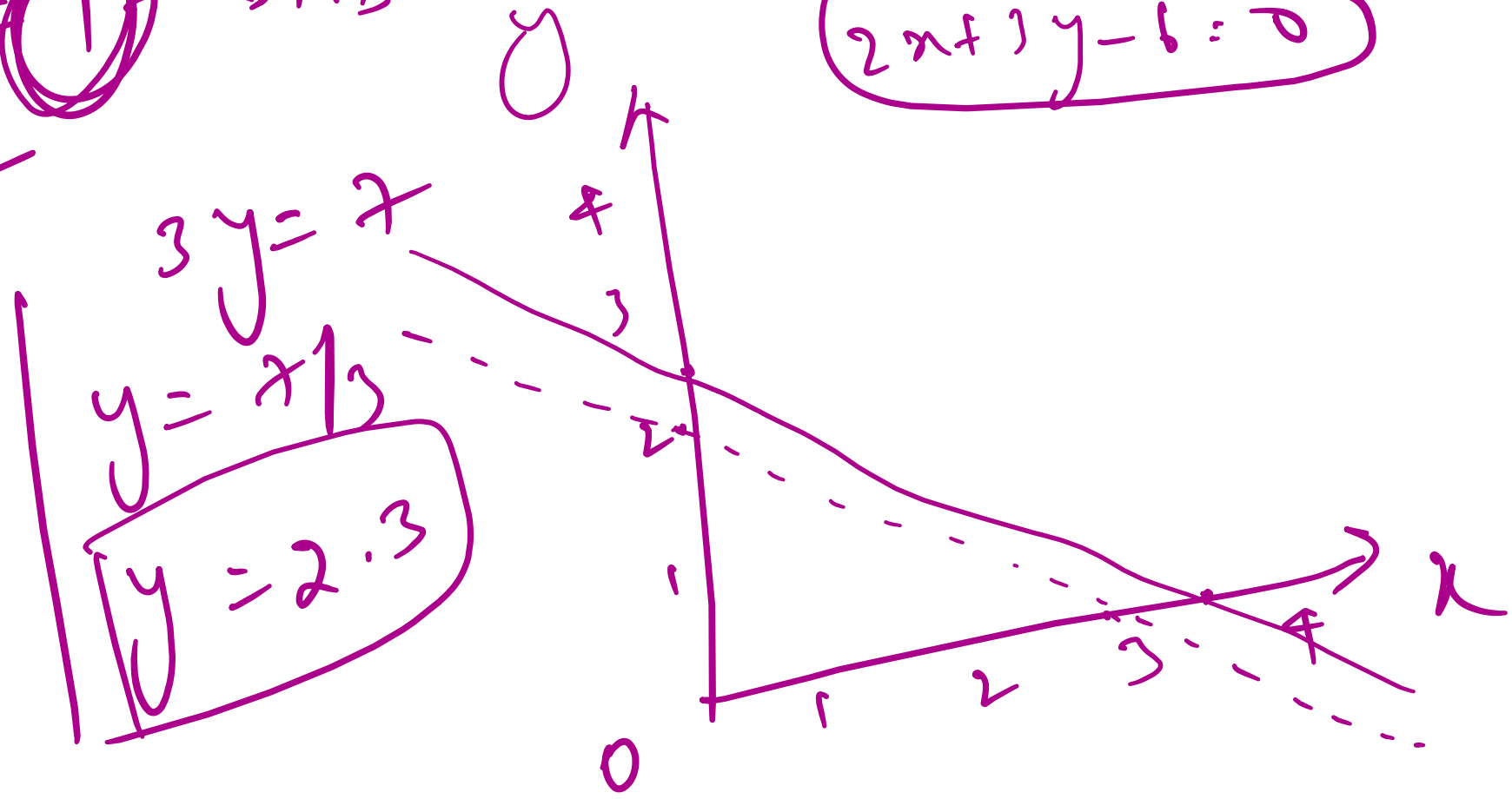
$x = 7/2$

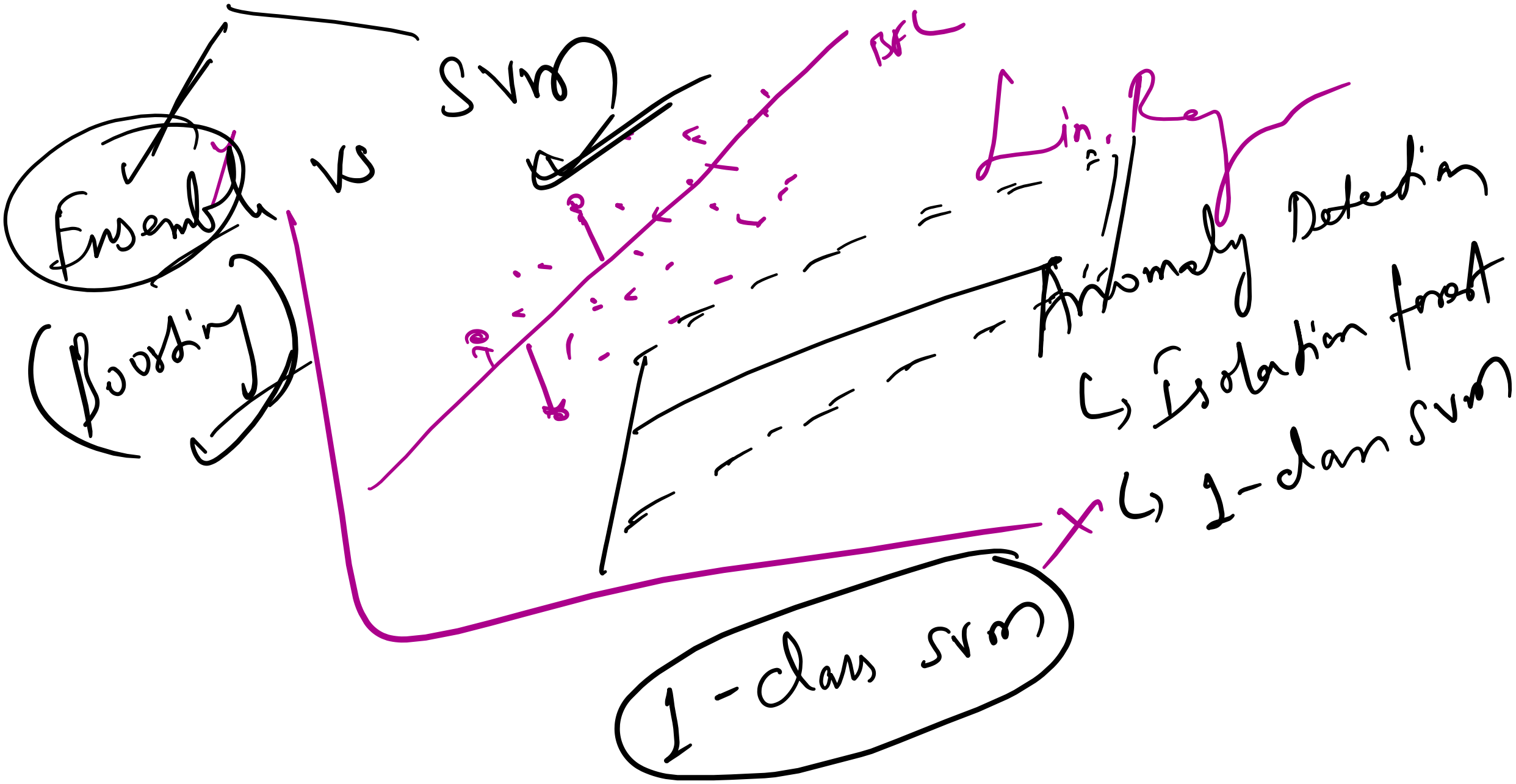
$x = 3.5$

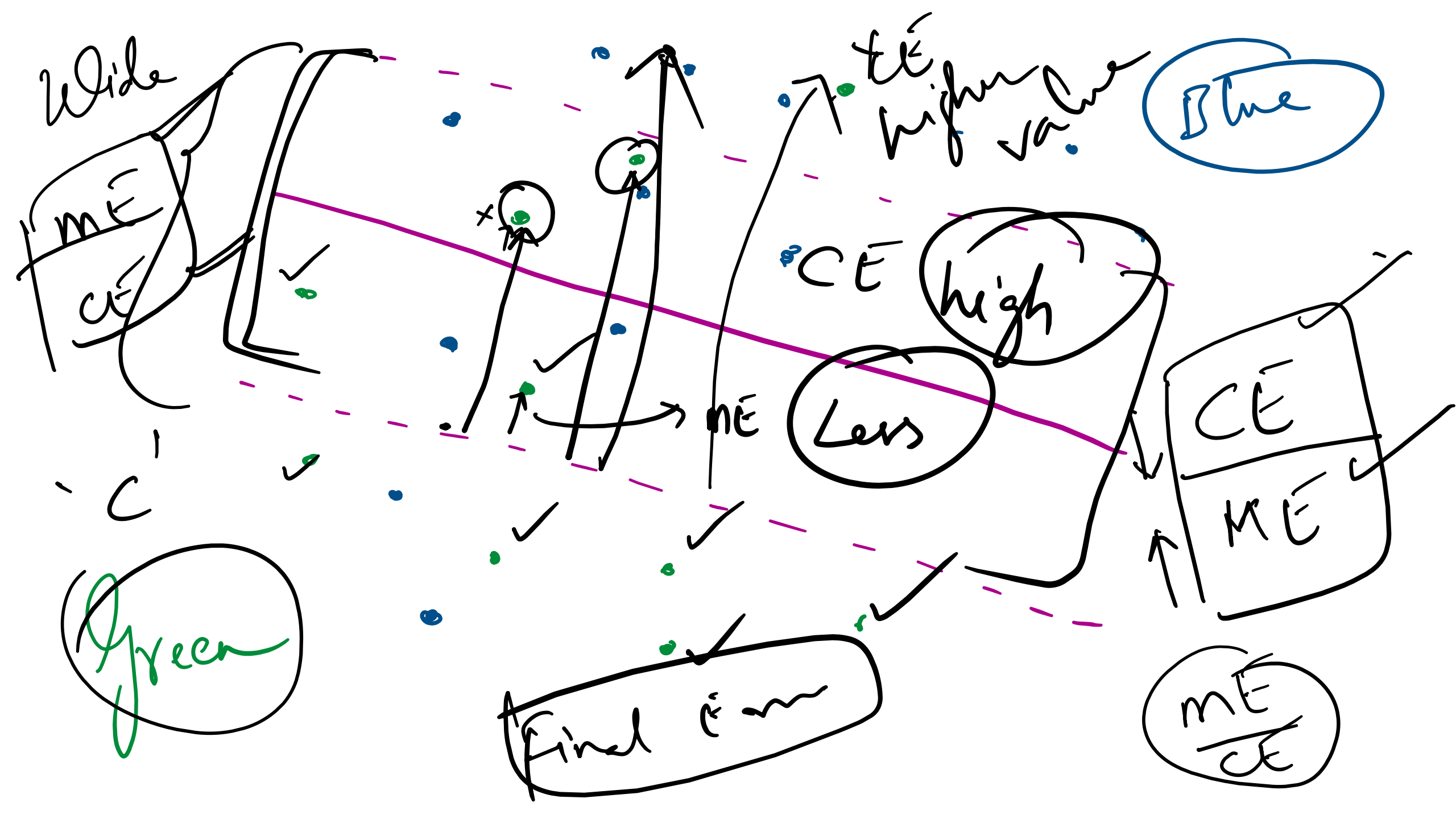
$3y = 7$

$y = 7/3$

$y = 2.3$




Ensemble
(Boosting)
vs
SVM
RBF
Lin. Reg
Anomaly Detection
↳ Isolation forest
↳ 1-class SVM
1-class SVM


Wide
ME
CE
C
Green
ME
CE
high
Less
CE
ME
Blue
ME/CE
Final

Pls come back at 9:45 A.M.

M.E = $a^2 + b^2$

$\frac{de}{da} = 2a$; $\frac{de}{db} = 2b$

G.d

Derivative part

η

α

learning rate

$e = 1.5$

↳ $= 1.2$

↳ 1.1 ↳ 0.8

New error $\Rightarrow$ old error $- \alpha *$ partial derivative

0.05

$a \longrightarrow a - \eta * 2a \Rightarrow$ ✓ $a(1-2\eta)$

$b \longrightarrow b - \eta * 2b \Rightarrow$ ✓ $b(1-2\eta)$

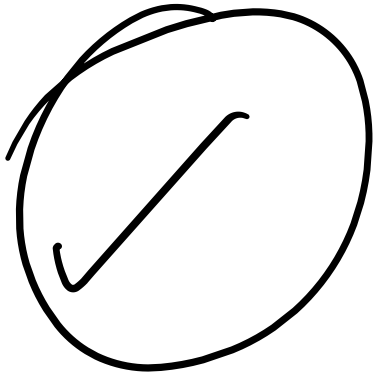
$1 * 0.05 = < 1$

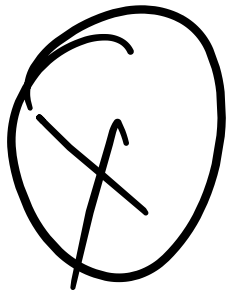
Expansion factor

'C' parameter :-

C Classification error

Margin error





M.E → 2.4511

C.E → 3.7754

SVM Error

C.E + M.E

C.E * C parameter

Default →

C = 1

C.E * 1

C = 0.02

C.E * = C.E

C = 0.05

C = 2, 1, 5, 7

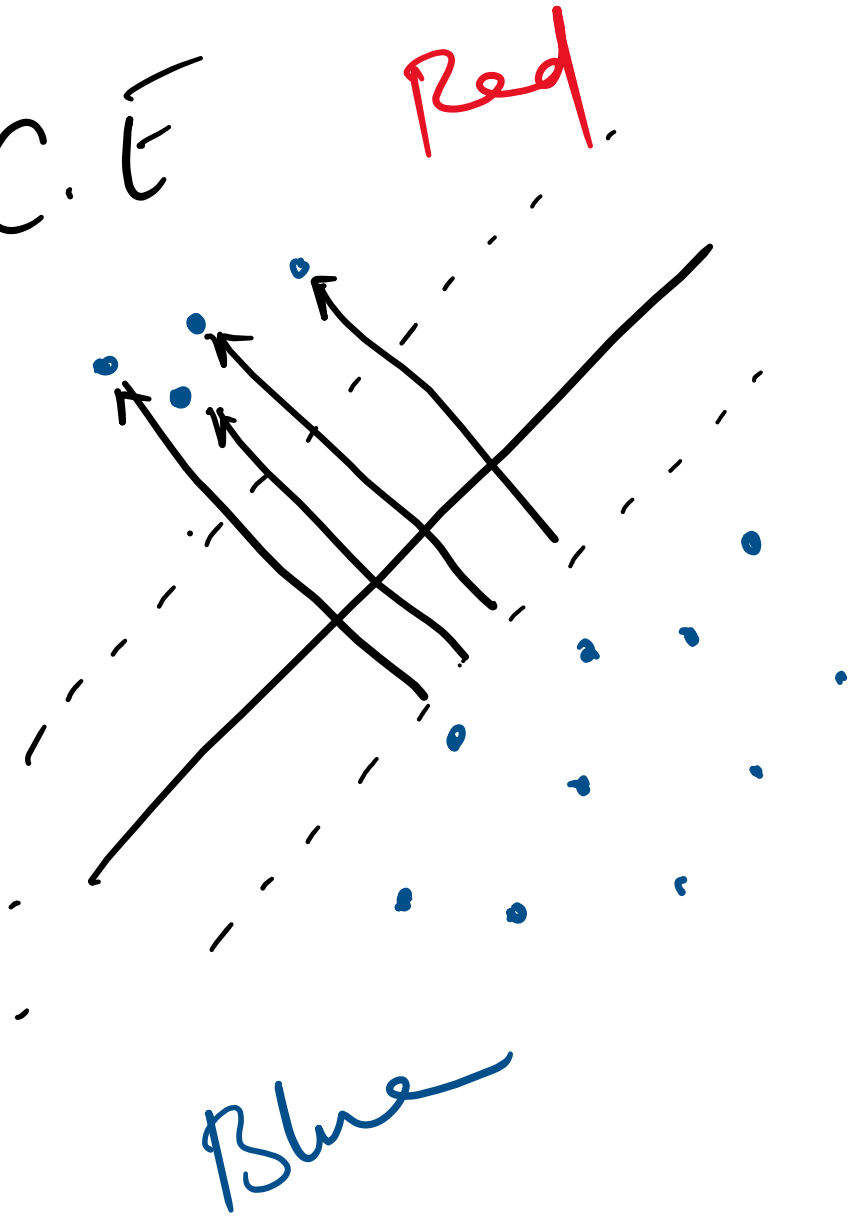
- C parameter

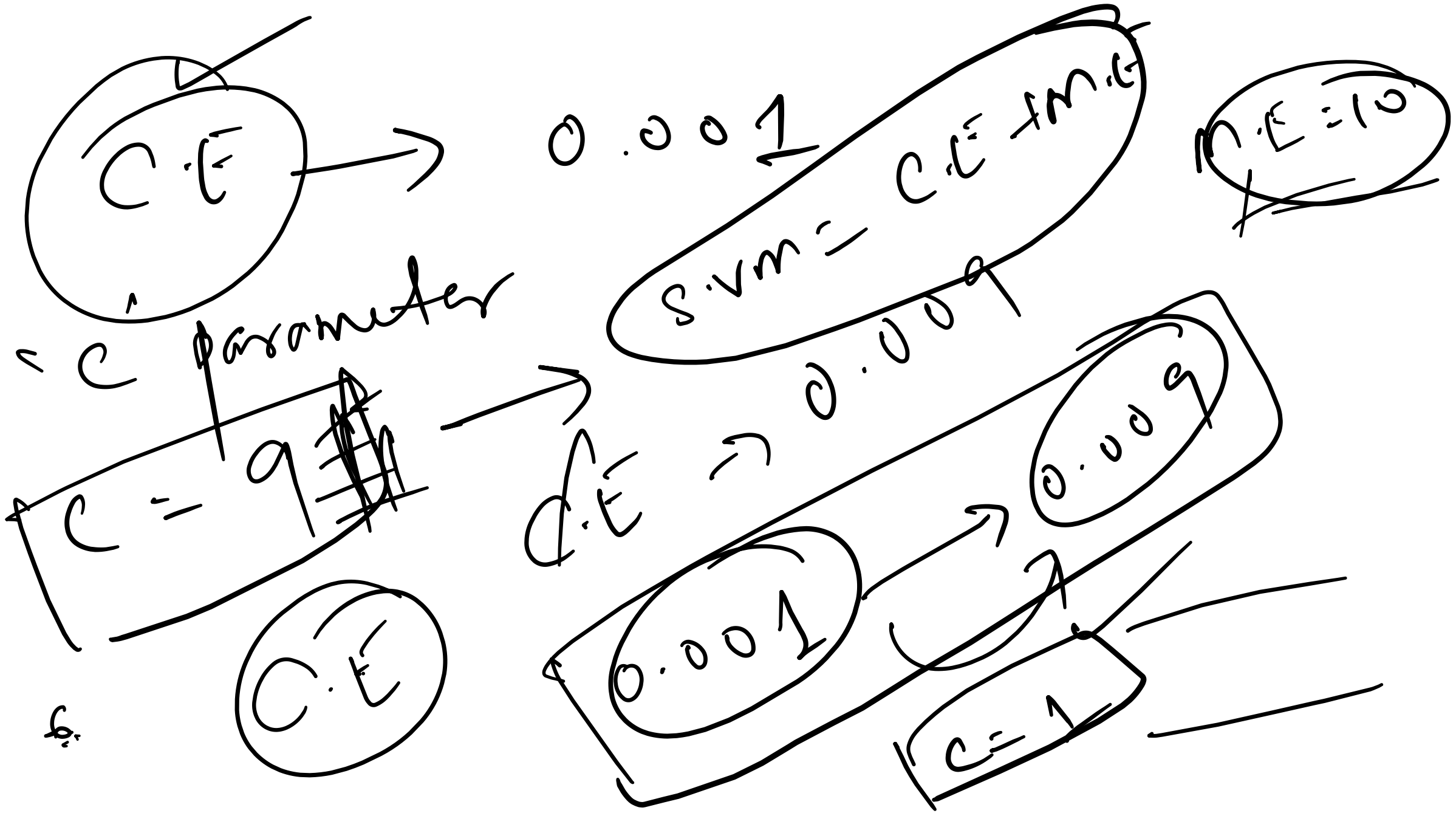
— Either diminish C.E (or) Magnify C.E

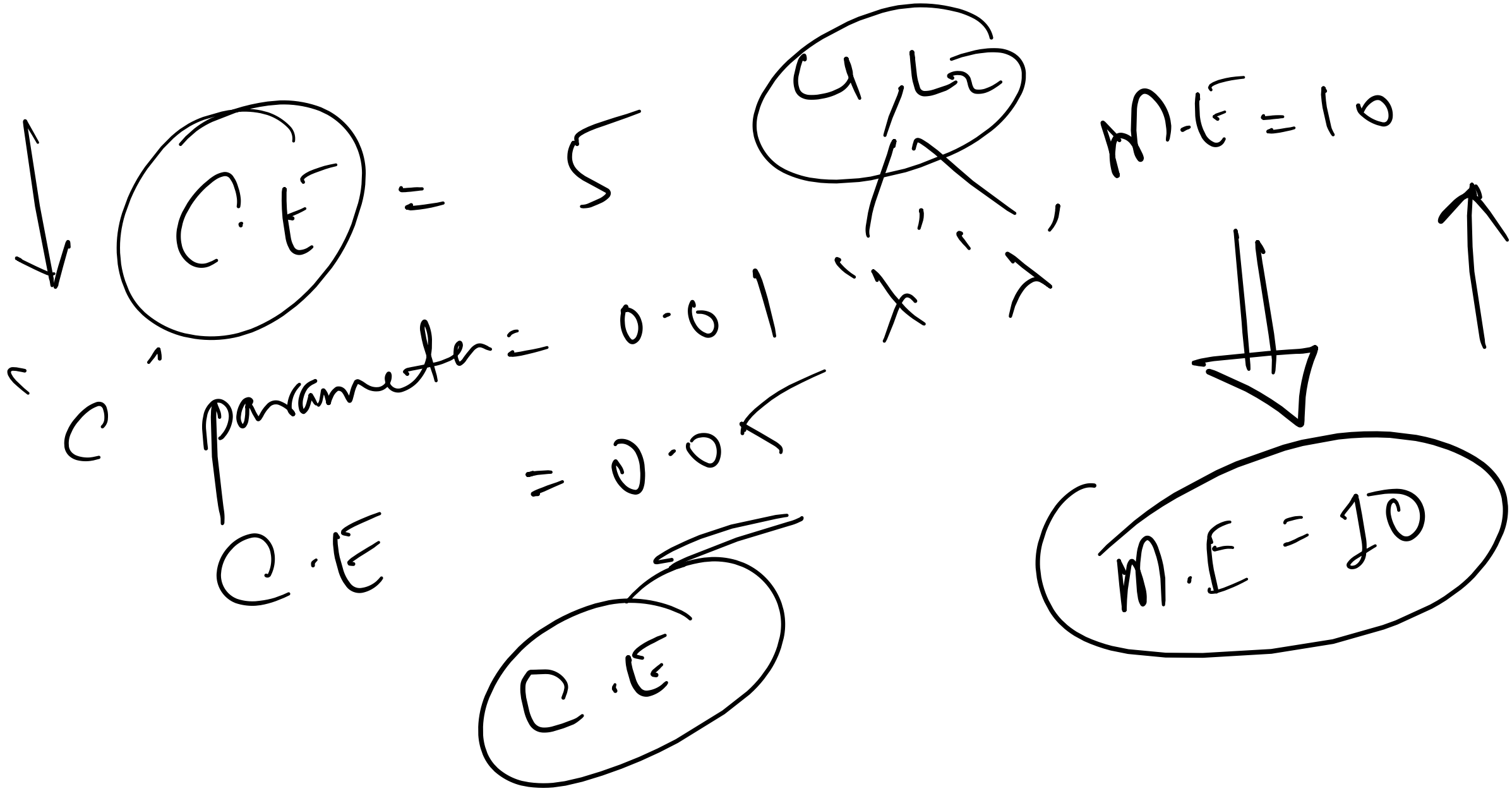
C = 4

C.E = 105 * 4

= 420




C.E
0.0001
S.VM = C.E + M.E
C.E = 10
C parameter
C = 9
C.E → 0.009
0.009
0.001
C = 1
C.E
6.


C.E
=
5
M.E=10
C parameter = 0.01
= 0.0
C.E
C.E
M.E = 10