

Poker Room

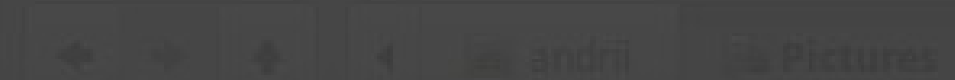
Сервер

Terminal



```
#RES 1 bot2_1 3 9 6458.971747
#RES 2 bot2_2 -1 0 20439.501748
#RES 3 bot2_3 1 8 23621.514731
#RES 4 bot2_4 -1 0 15754.516892
#RES 5 bot3_5 -1 0 16241.943312
#RES 0 bot2_0 -1 0 23595.903899
#RES 1 bot2_1 -1 0 6458.971747
#RES 2 bot2_2 -1 0 20439.501748
#RES 3 bot2_3 -1 0 23621.014731
#RES 4 bot2_4 1 10 15755.016892
#RES 5 bot3_5 -1 0 16241.943312
#RES 0 bot2_0 -1 0 23594.903899
#RES 1 bot2_1 1 9 6461.971747
#RES 2 bot2_2 -1 0 20439.501748
#RES 3 bot2_3 -1 0 23621.014731
#RES 4 bot2_4 -1 0 15754.016892
#RES 5 bot3_5 -1 0 16240.943312
#RES 0 bot2_0 1 9 23598.403899
#RES 1 bot2_1 -1 0 6460.971747
#RES 2 bot2_2 -1 0 20438.501748
#RES 3 bot2_3 -1 0 23620.014731
#RES 4 bot2_4 -1 0 15754.016892
#RES 5 bot3_5 -1 0 16240.443312
->showroomlog -n 1 -f #RES
```

File Edit View Go Bookmarks Help



Terminal



login	bot2_0	bot2_1	bot2_2	bot2_3	bot2_4	bot3_5	
cash	21707.02	15380.24	2135.12	22891.78	11809.25	3751.32	
rebuy	0	0	0	0	0	0	
MAX cash	75245.90	52695.11	44444.52	51136.03	49733.37	49247.47	
MIN cash	0.00	0.00	0.00	0.00	0.00	0.00	
COUNT all	1297	1297	1297	1297	1297	1297	
COUNT won	244	282	214	224	246	108	
won	308068.03	296737.28	283685.03	288648.56	209065.60	505703.63	
lost	306361.01	301357.04	301549.91	285756.79	217256.35	521952.31	
MIDDLE won	237.52	228.79	218.72	222.55	161.19	389.90	
MIDDLE lost	236.21	232.35	232.50	220.32	167.51	402.43	

->

Terminal

— + ×

```
->
->
->
-> Computer
->
->
->
->
->
-> Home
->
->
->
->
->
-> Diskran
->
->
->
->
->
->
-> display
-> display->room -n 1
-> display->room 1->exit
-> display->room -n 1
```

room number is 2

bot2_0



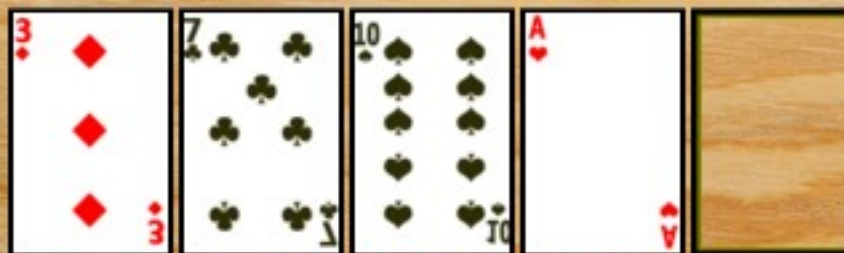
19999.0
(0.0)

bot2_1



13972.6
(0.0)

69.9



18155.2

bot2_3



19999.0
(0.0)

bot2_2



19999.0
(0.0)

client_5



13972.6
(0.0)

bot2_4



13902.7
(69.9)

Клиент

exit

help

game

exit

help

game

Poker Room Help

[exit](#)[menu](#)

Menu Help

If you want move to game please press "game". If you press "game" and game don't start - check server.

If you want exit from game please press "exit".

For help in game press "help".

Help Help

If you want exit from game please press "exit".

You always can come back to menu - press "menu".

Game Help

If you want exit from game please press "exit".

For help in game press "help".

You always can come back to menu - press "menu".

ROOM NUMBER IS 1

exit

menu

help

disconnect

client_0



20000.0
(0.0)

UNKNOWN



0.0
(0.0)

UNKNOWN



0.0
(0.0)

0.0



UNKNOWN



0.0
(0.0)

0.0

UNKNOWN



0.0
(0.0)

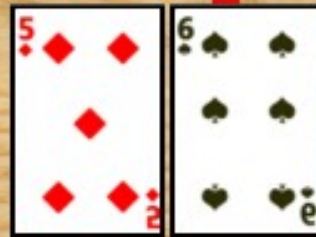
UNKNOWN



0.0
(0.0)

ROOM NUMBER IS 1

client_0



20000.0
(0.0)

bot2_5



19999.0
(1.0)

bot2_1



20000.0
(0.0)

1.0



bot2_4



20000.0
(0.0)

2.5

bot2_3



19999.0
(1.0)

bot2_2



19999.5
(0.5)

exit
menu
help
disconnect

0.000000

call

raise

fold

ROOM NUMBER IS 1

client_0

13732.8
(0.0)

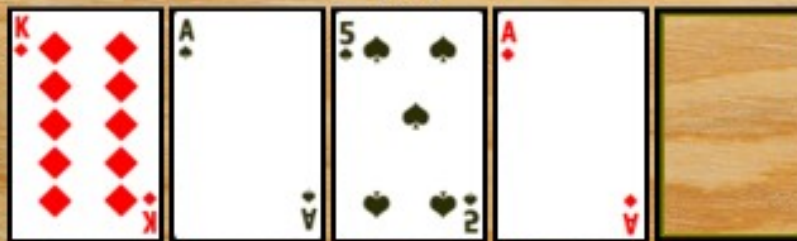
bot2_5

26058.6
(0.0)

bot2_4

20211.4
(0.0)

0.0



251.6

bot2_3

21757.7
(0.0)

bot2_1

18083.4
(0.0)

bot2_2

19904.4
(0.0)

exit

menu

help

disconnect

2312.892763

call

raise

fold

ROOM NUMBER IS 1

client_0

19423.3
(0.0)

bot2_1

15713.4
(0.0)

bot2_5

26053.6
(0.0)

bot2_4

20208.9
(0.0)

0.0

bot2_3

20635.2
(0.0)

bot2_2

17965.5
(0.0)

exit

menu

help

disconnect

new game

get money

0.000000

put money

0.000000

ROOM NUMBER IS 1

exit

menu

help

disconnect

client_5

20000.0
(0.0)

bot1_0

20000.0
(0.0)

bot1_1

20000.0
(0.0)

1.0



bot1_4

19999.0
(1.0)

2.5

bot1_3

19999.0
(1.0)

bot1_2

19999.5
(0.5)

0.000000

call

raise

fold

ROOM NUMBER IS 1



4680.7
(491.3)



8198.6
(0.0)



19504.6
(0.0)



2118.5
(6.0)



0.0



9533.7
(0.0)



35007.7
(0.0)

exit

menu

help

disconnect

new game

get money

0.000000

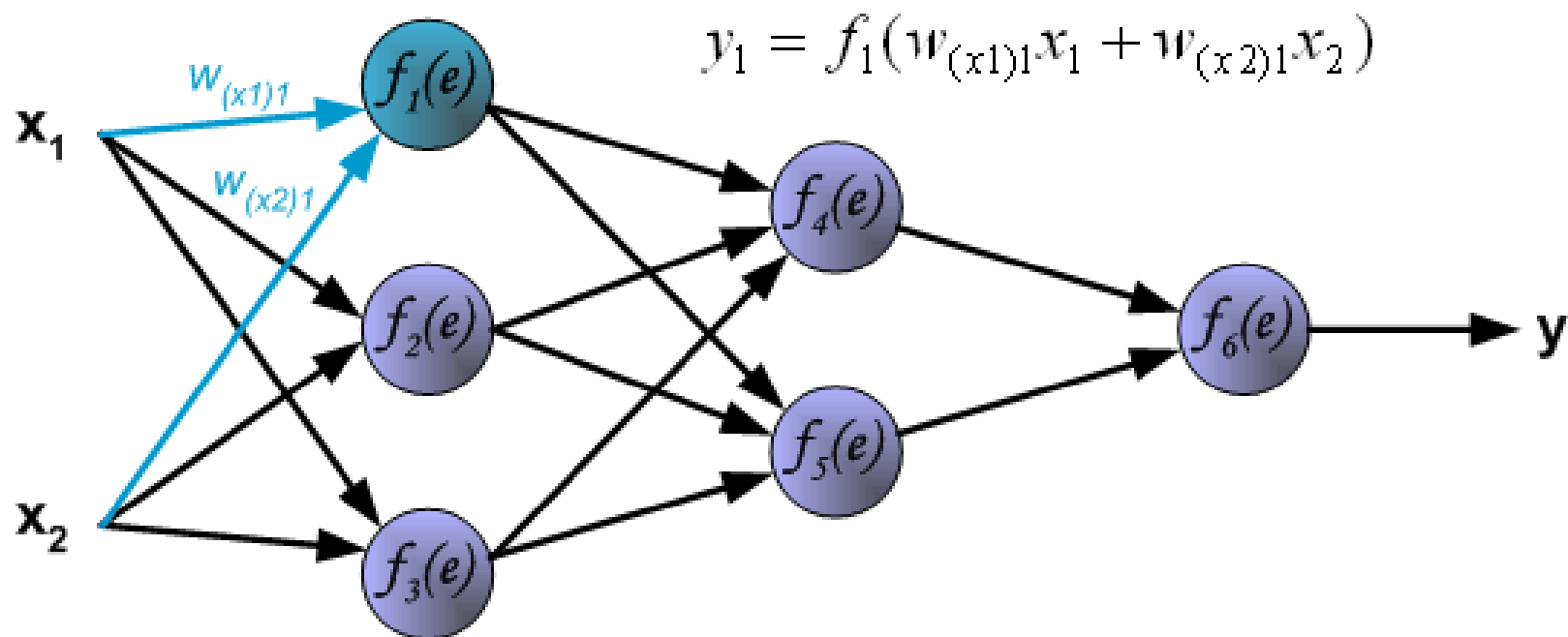
put money

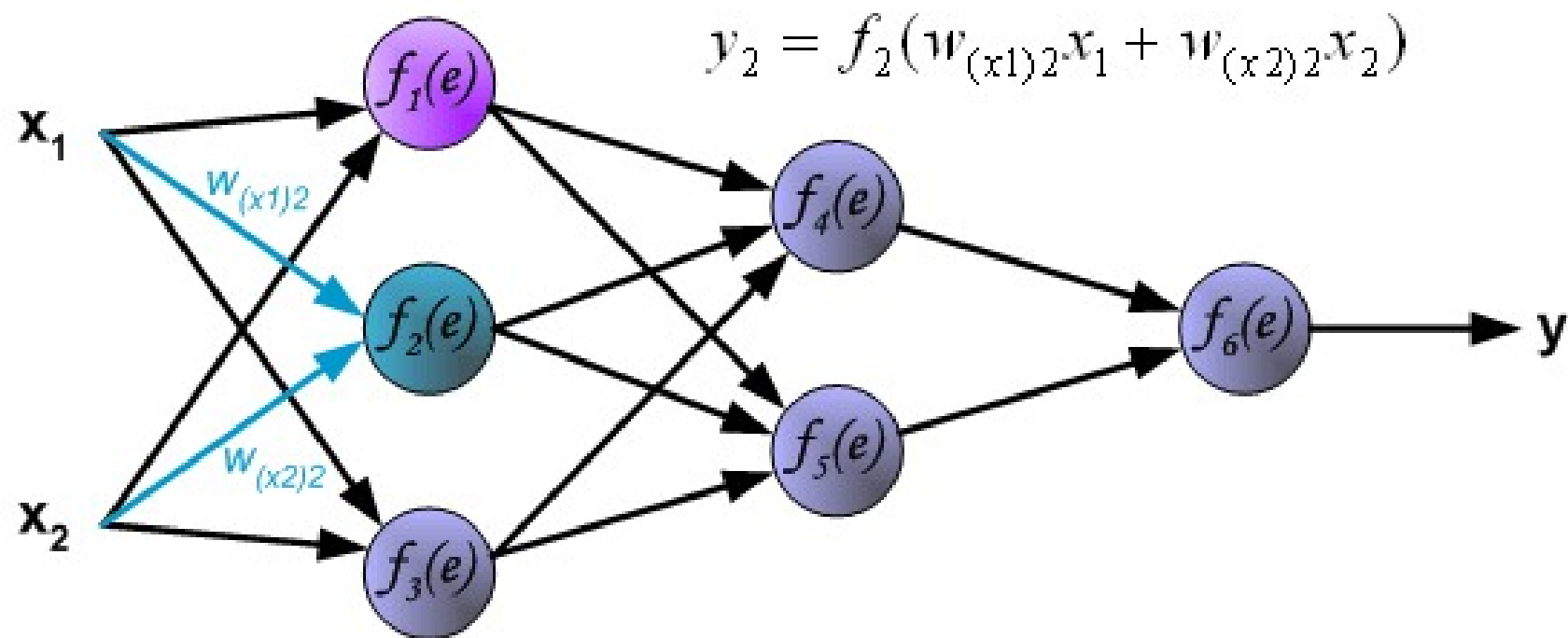
0.000000

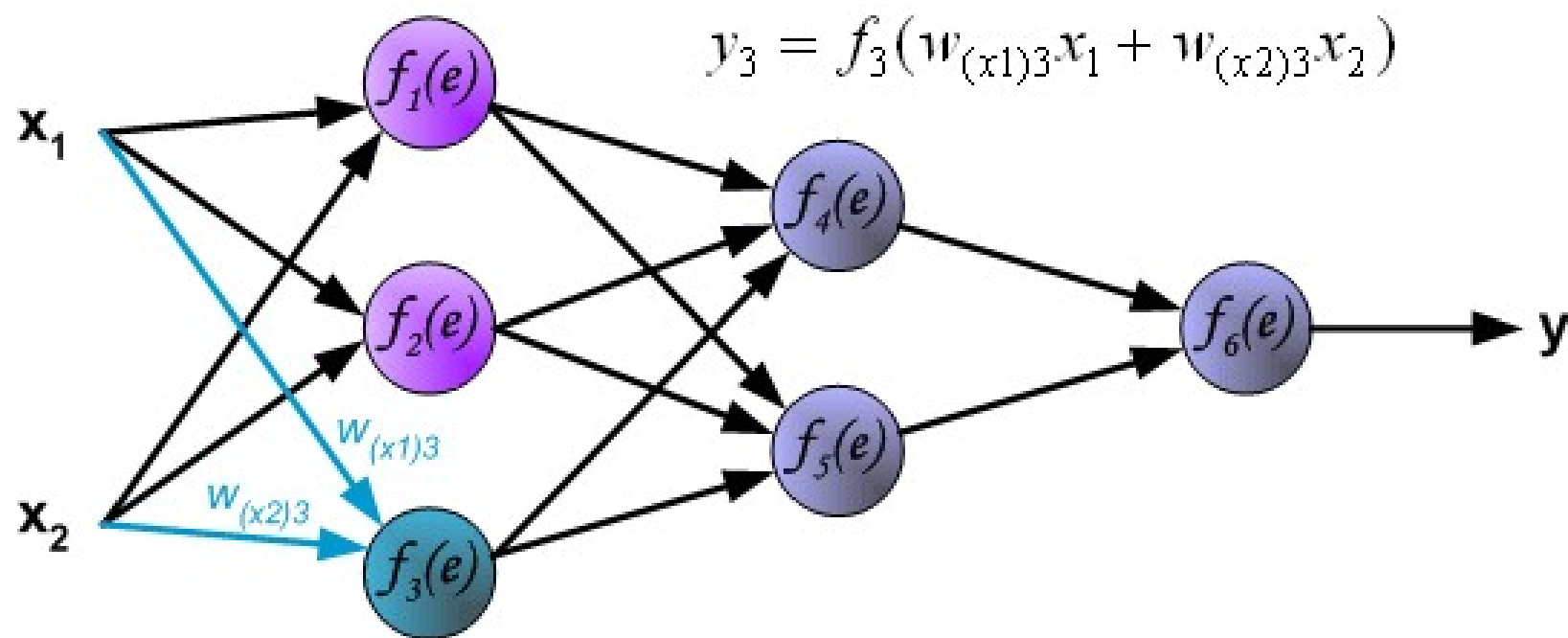
Первый Бот

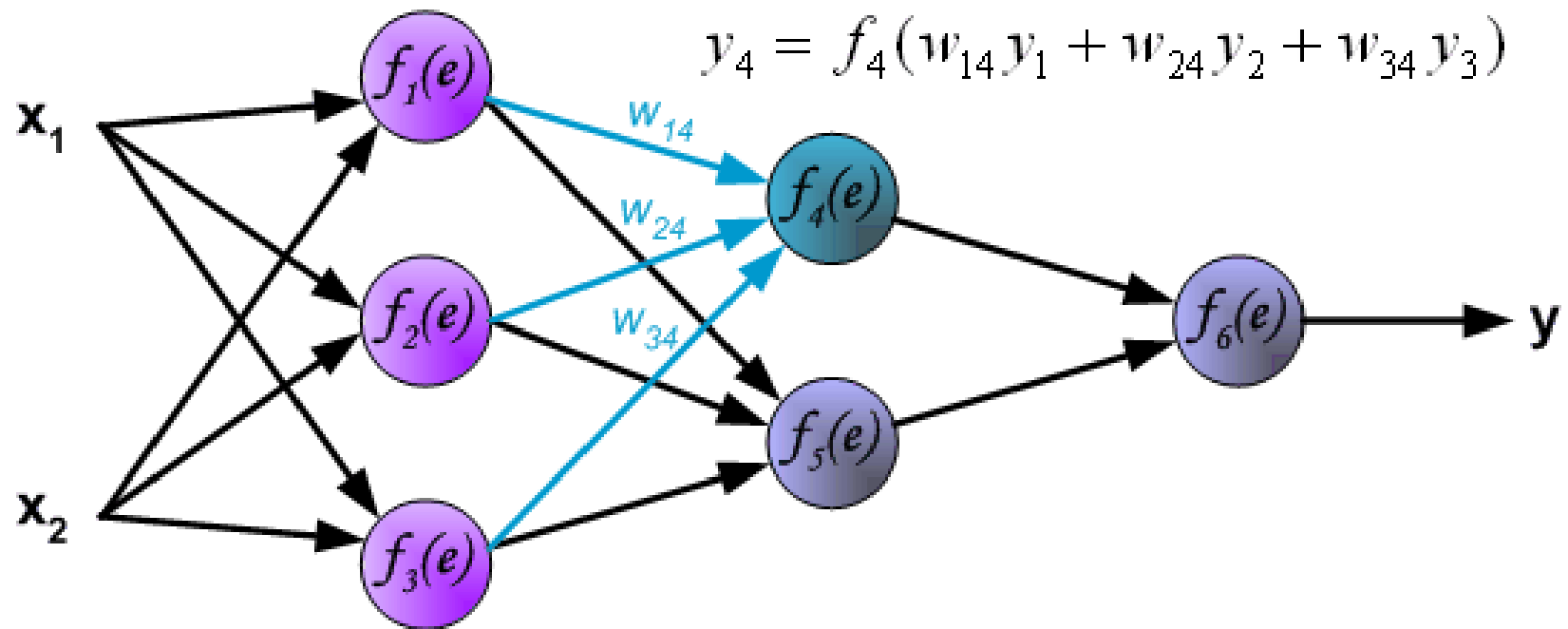
Второй Бот

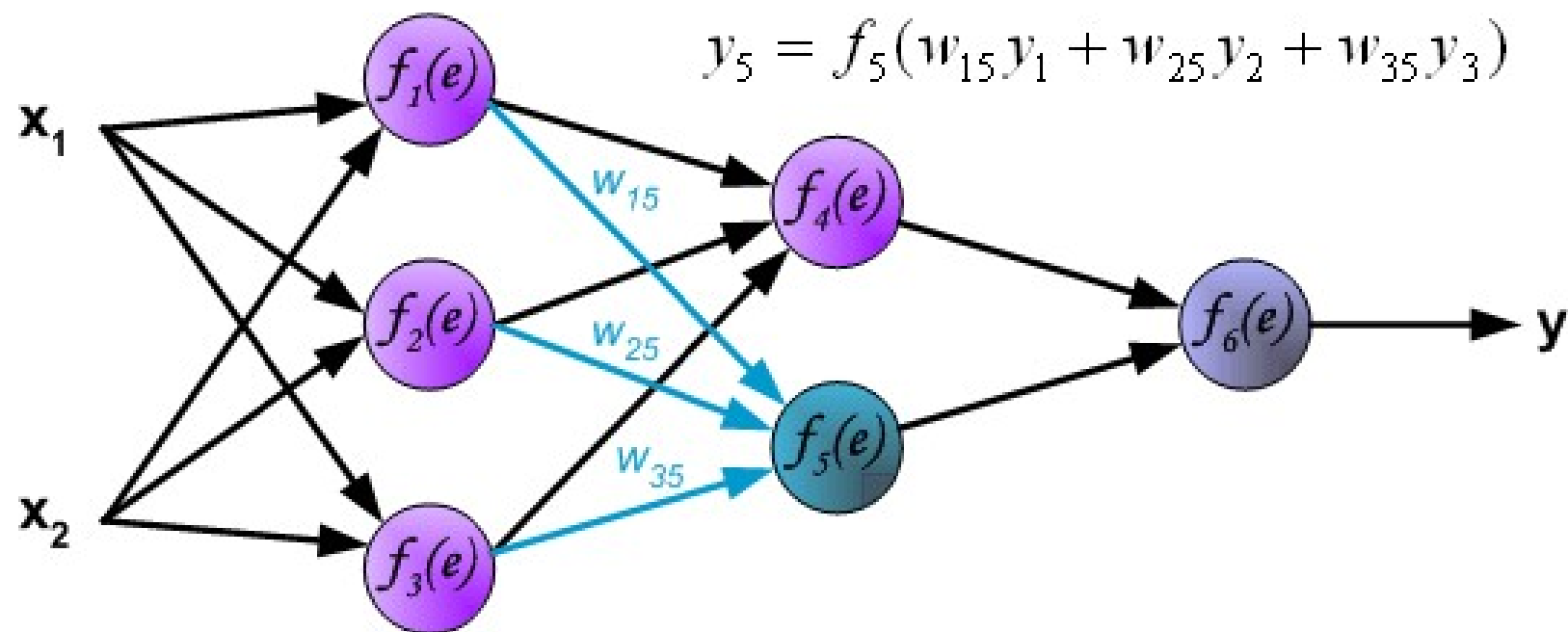
BackProp

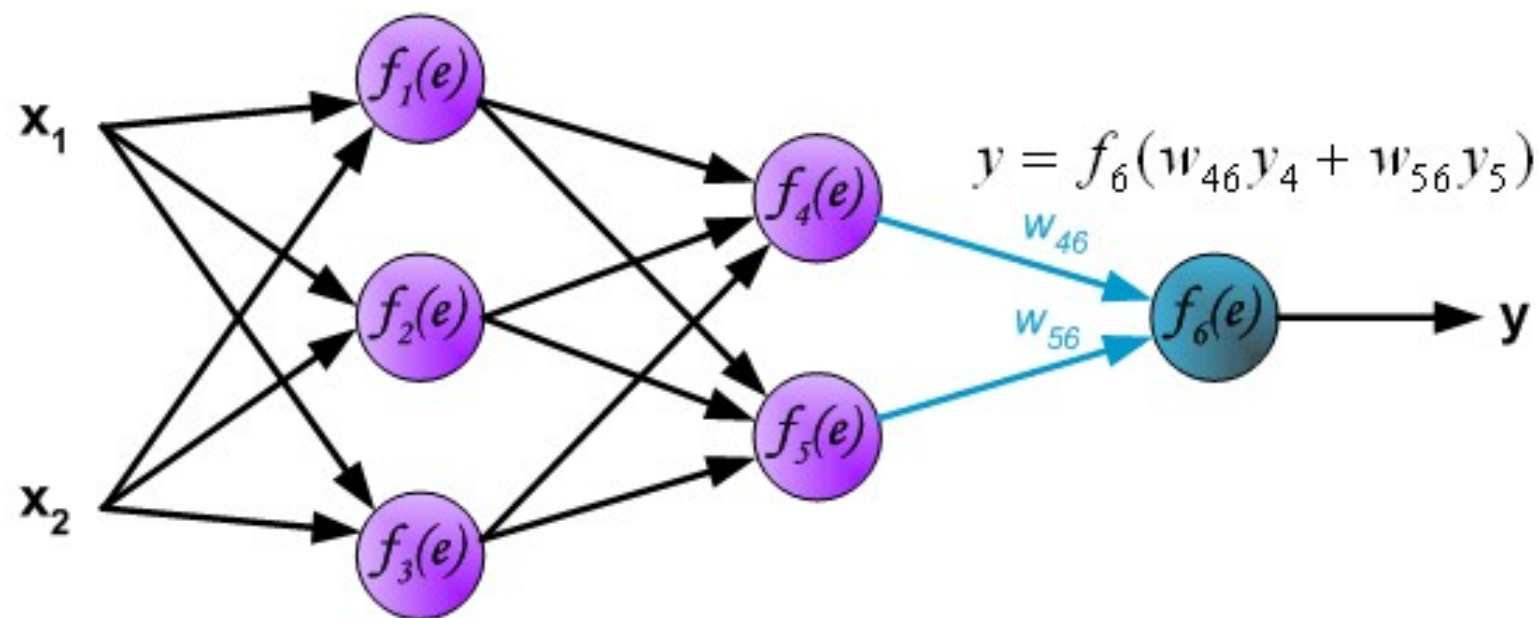


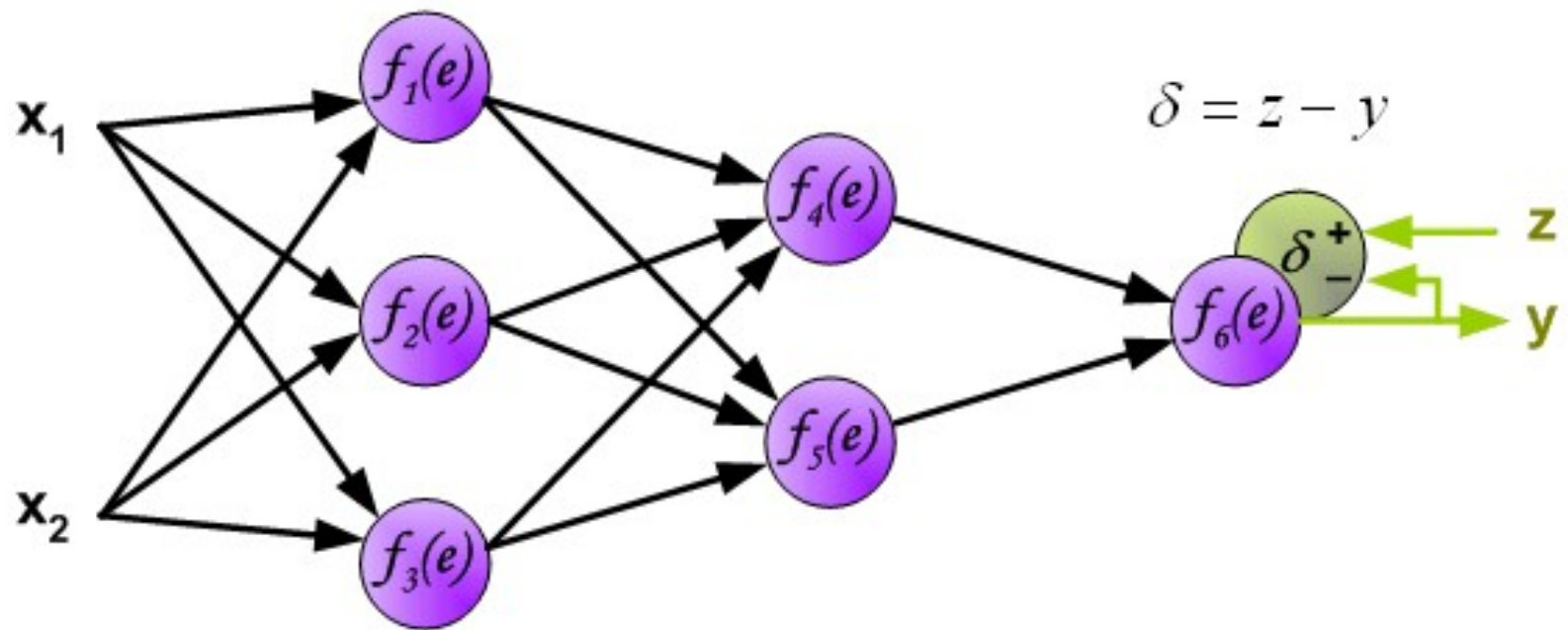


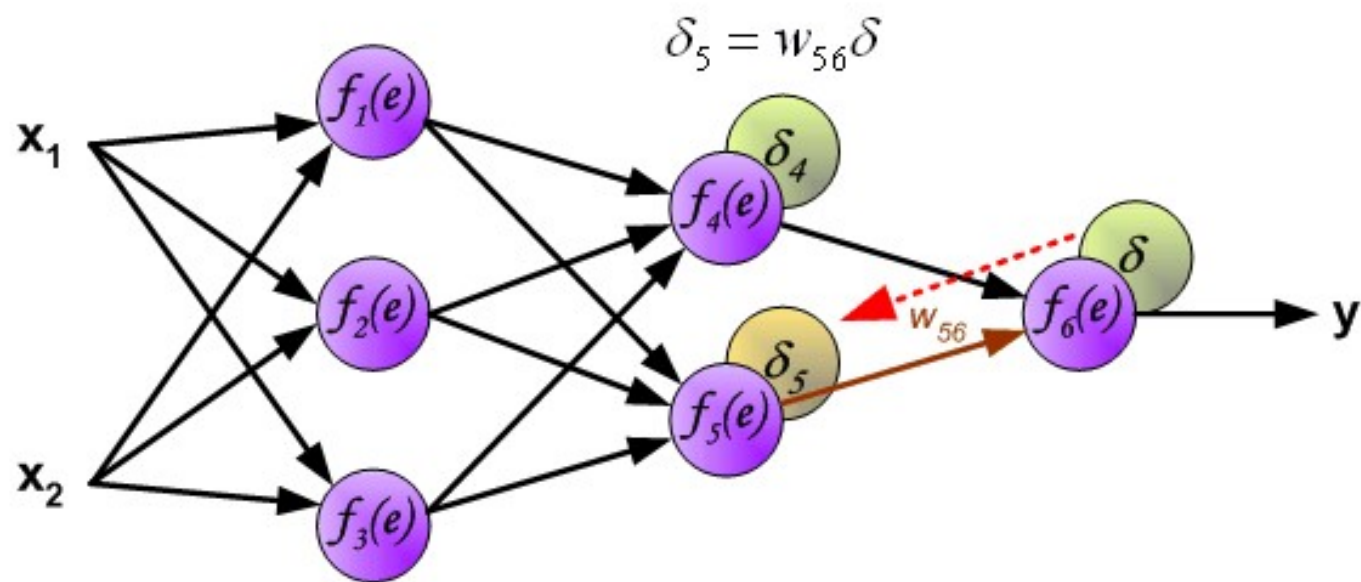
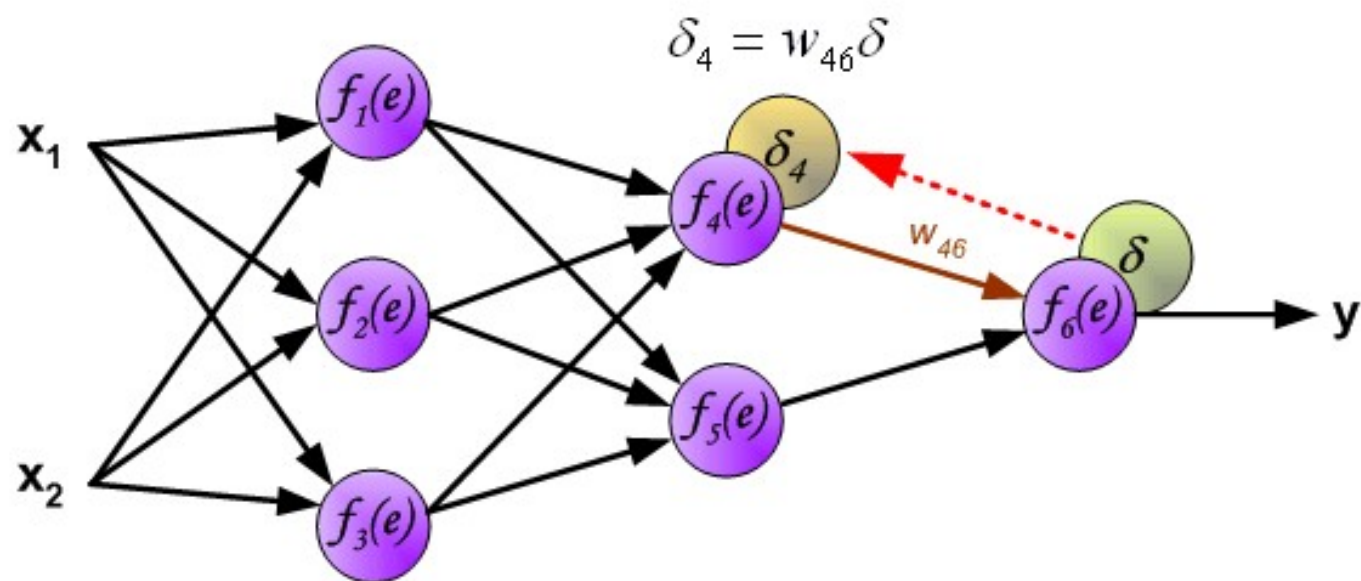


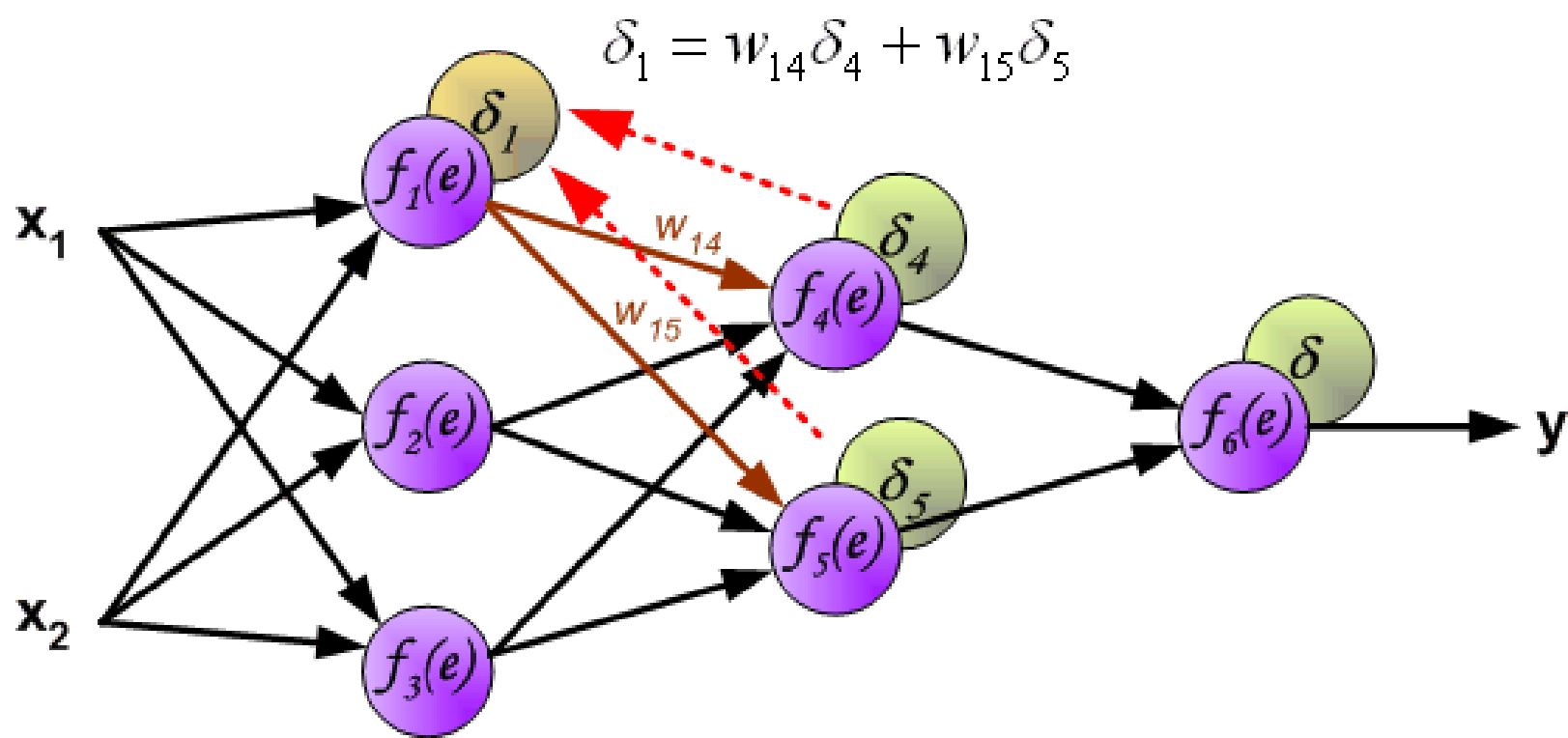


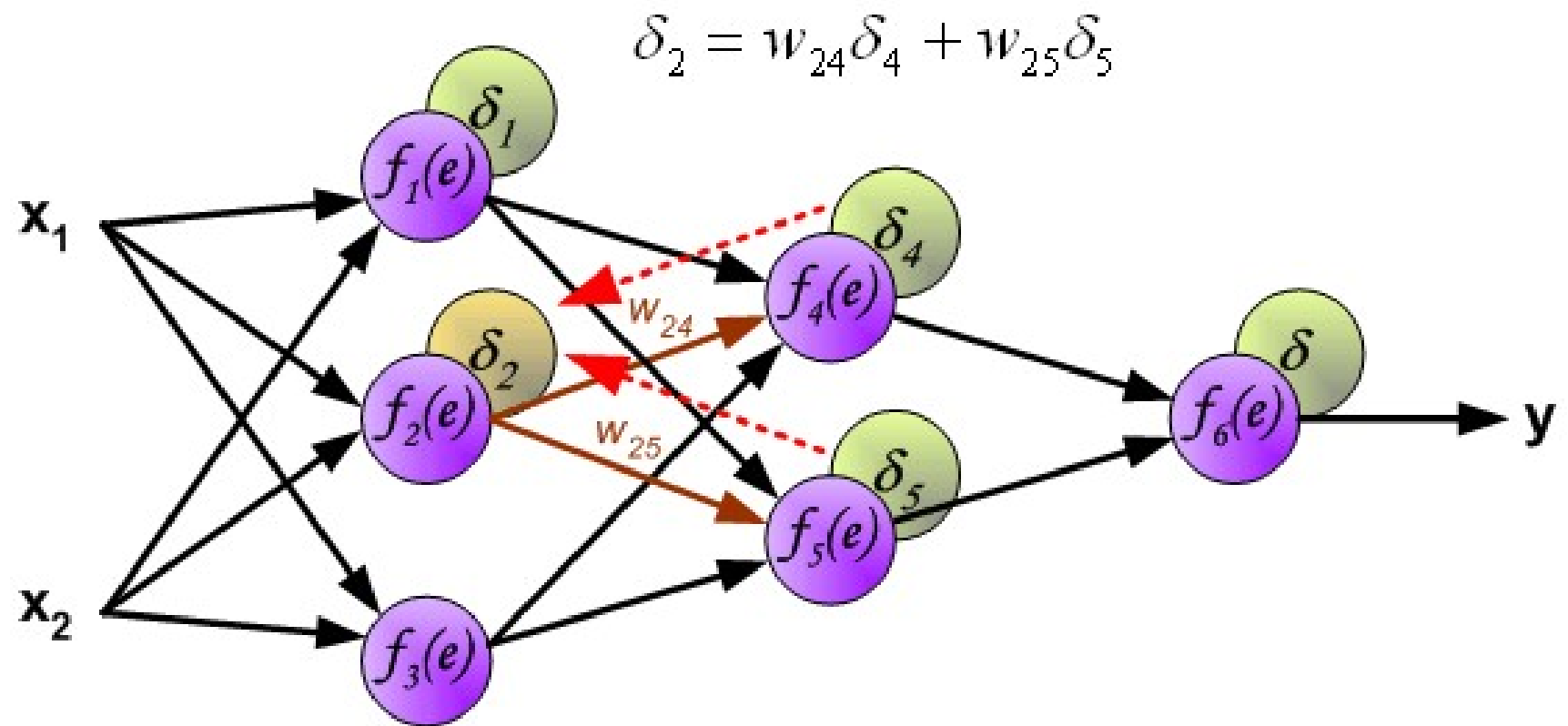


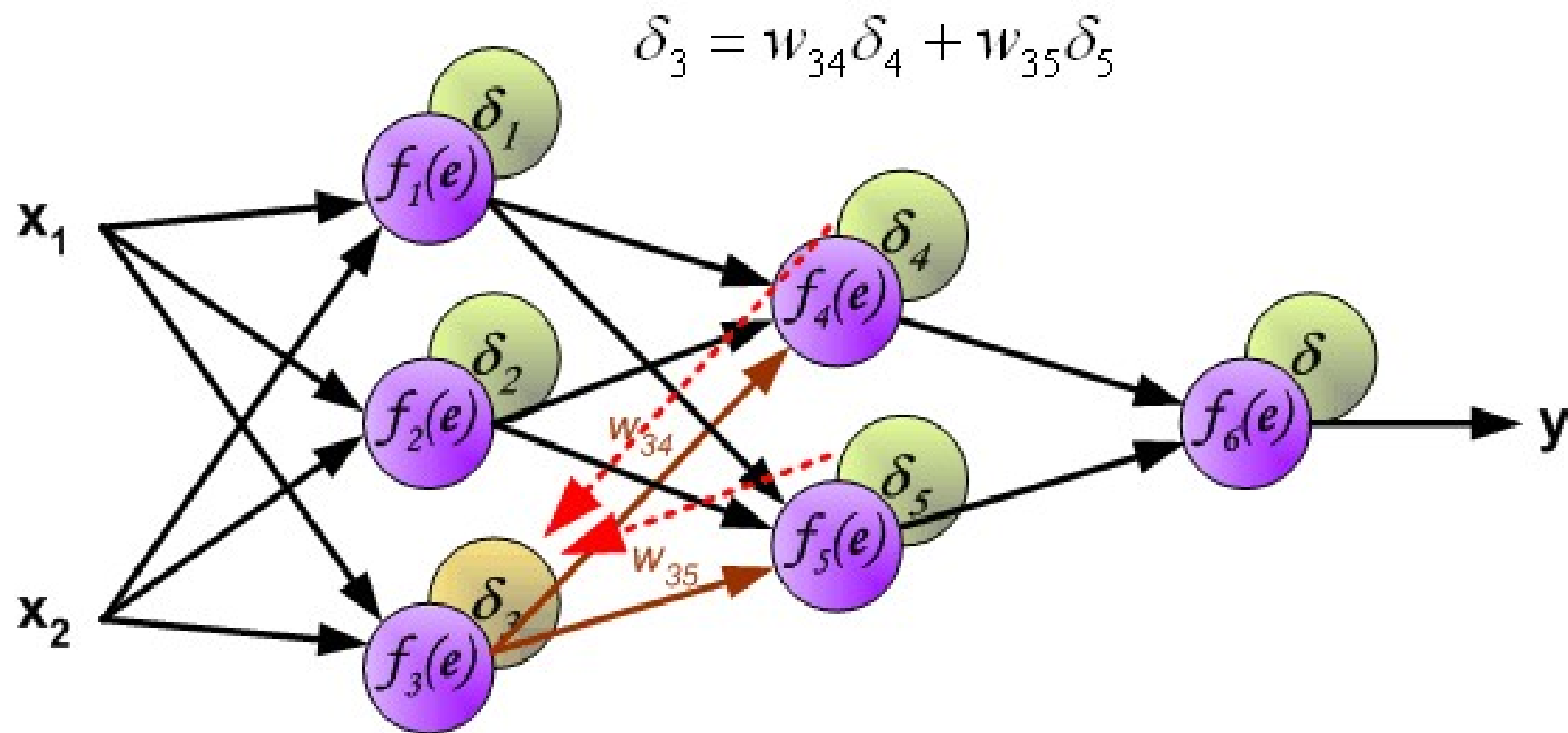


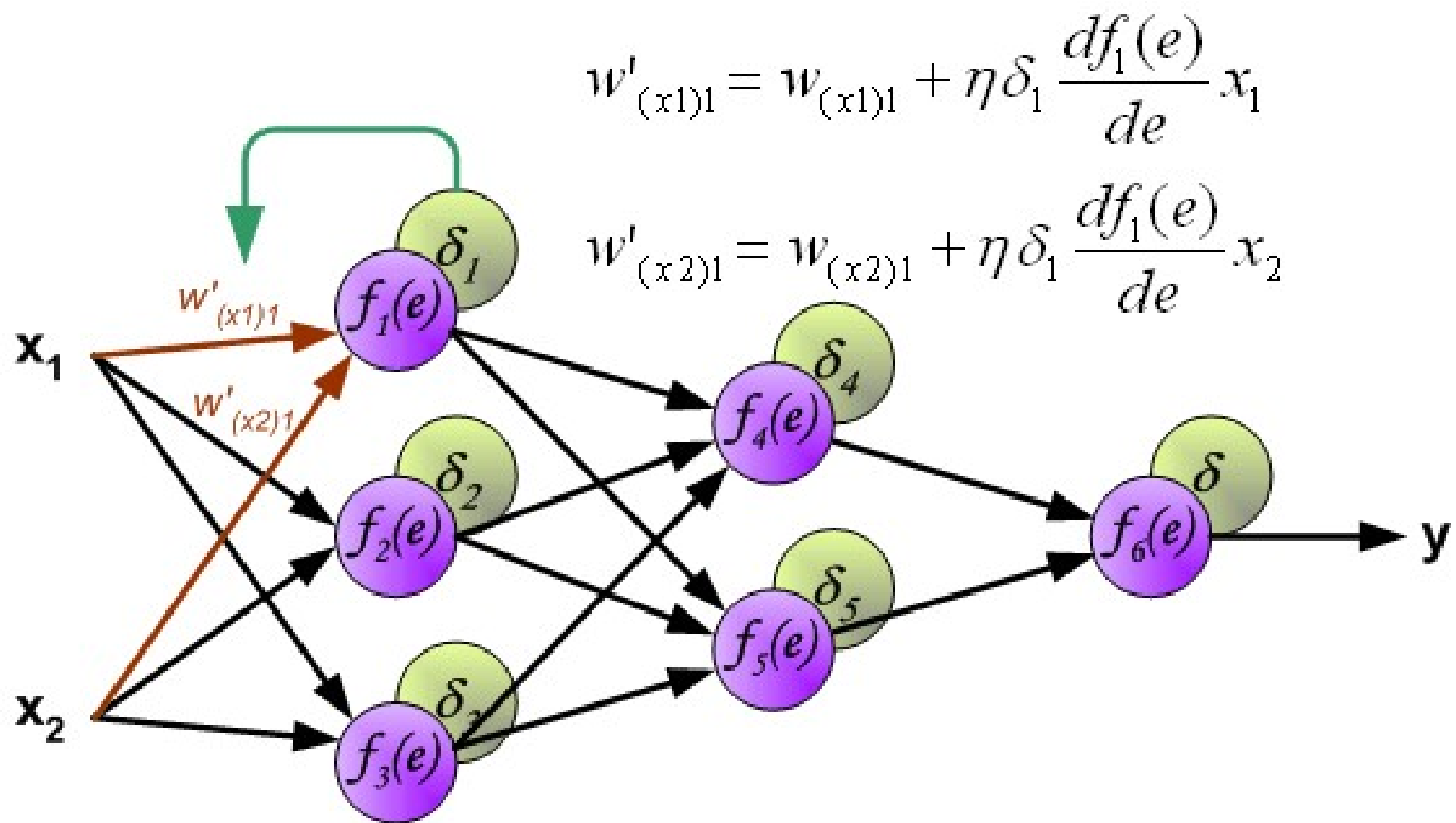






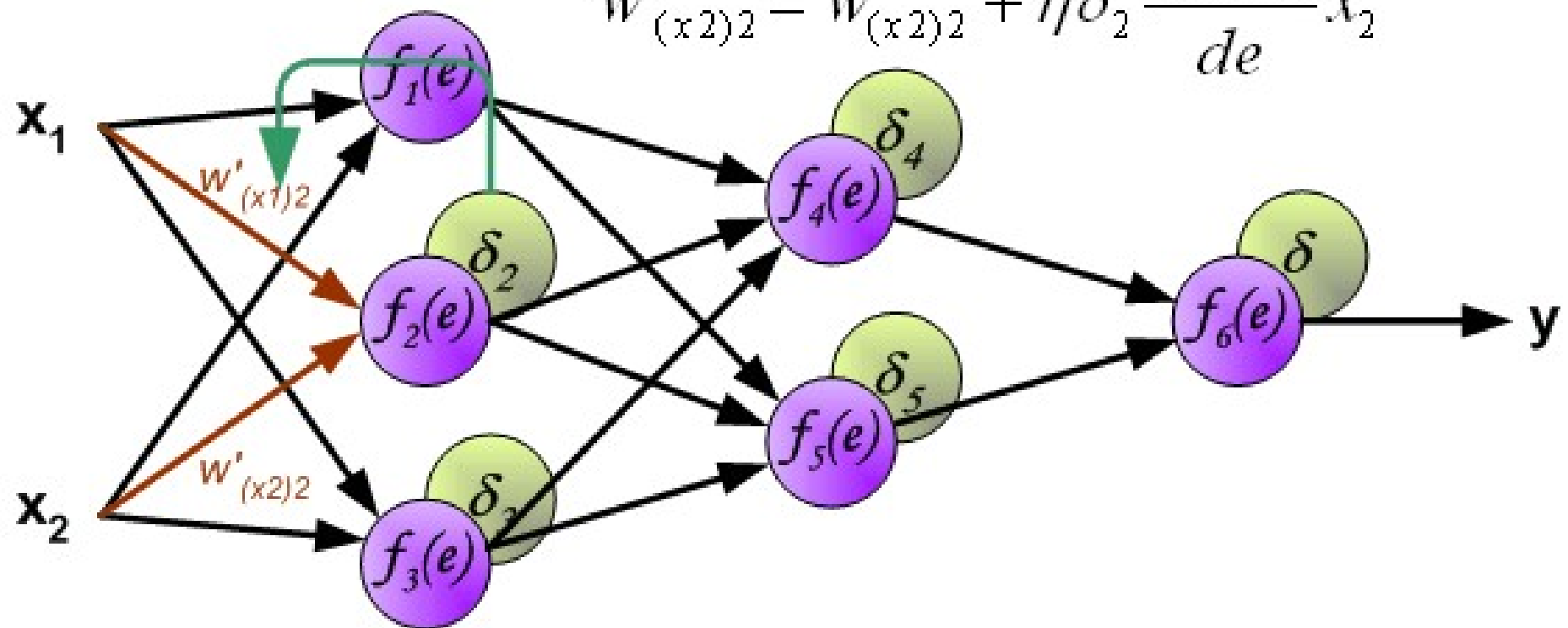






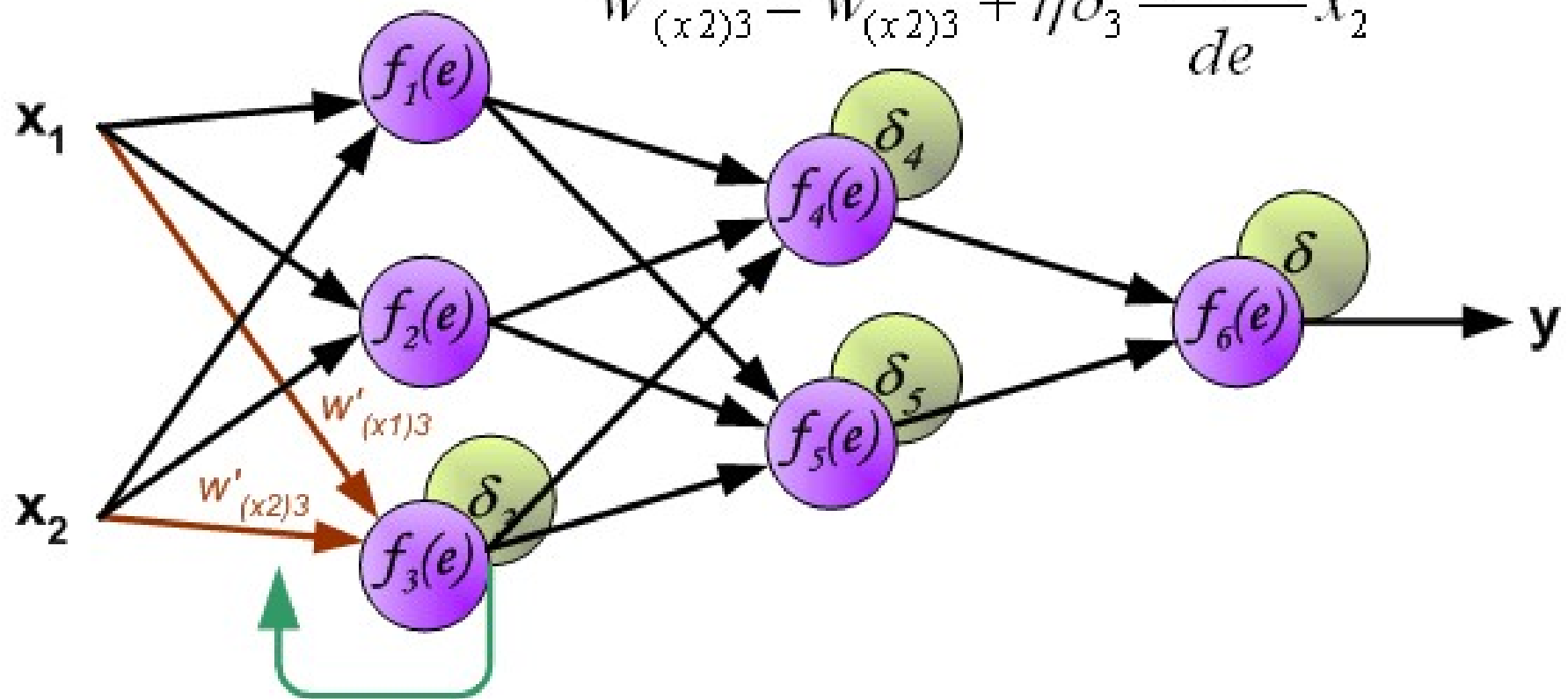
$$w'_{(x1)2} = w_{(x1)2} + \eta \delta_2 \frac{df_2(e)}{de} x_1$$

$$w'_{(x2)2} = w_{(x2)2} + \eta \delta_2 \frac{df_2(e)}{de} x_2$$



$$w'_{(x1)3} = w_{(x1)3} + \eta \delta_3 \frac{df_3(e)}{de} x_1$$

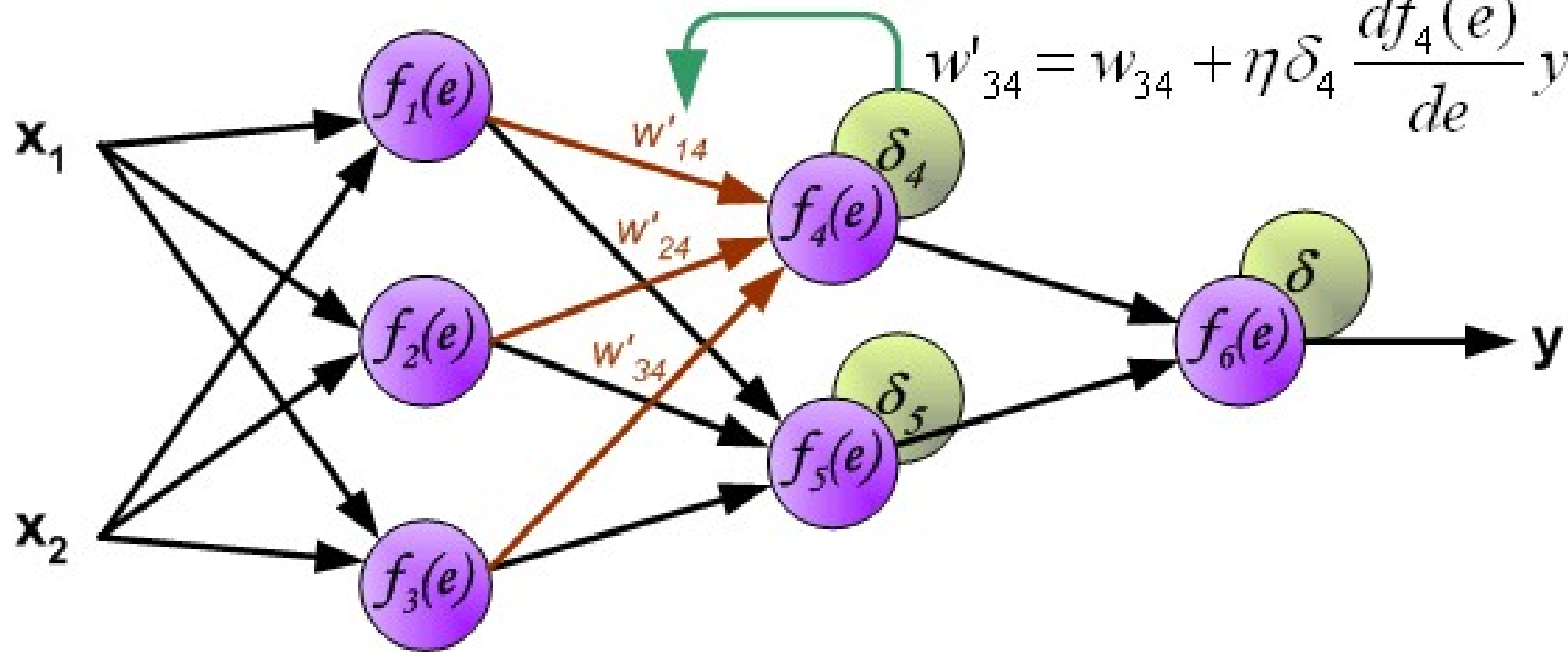
$$w'_{(x2)3} = w_{(x2)3} + \eta \delta_3 \frac{df_3(e)}{de} x_2$$



$$w'_{14} = w_{14} + \eta \delta_4 \frac{df_4(e)}{de} y_1$$

$$w'_{24} = w_{24} + \eta \delta_4 \frac{df_4(e)}{de} y_2$$

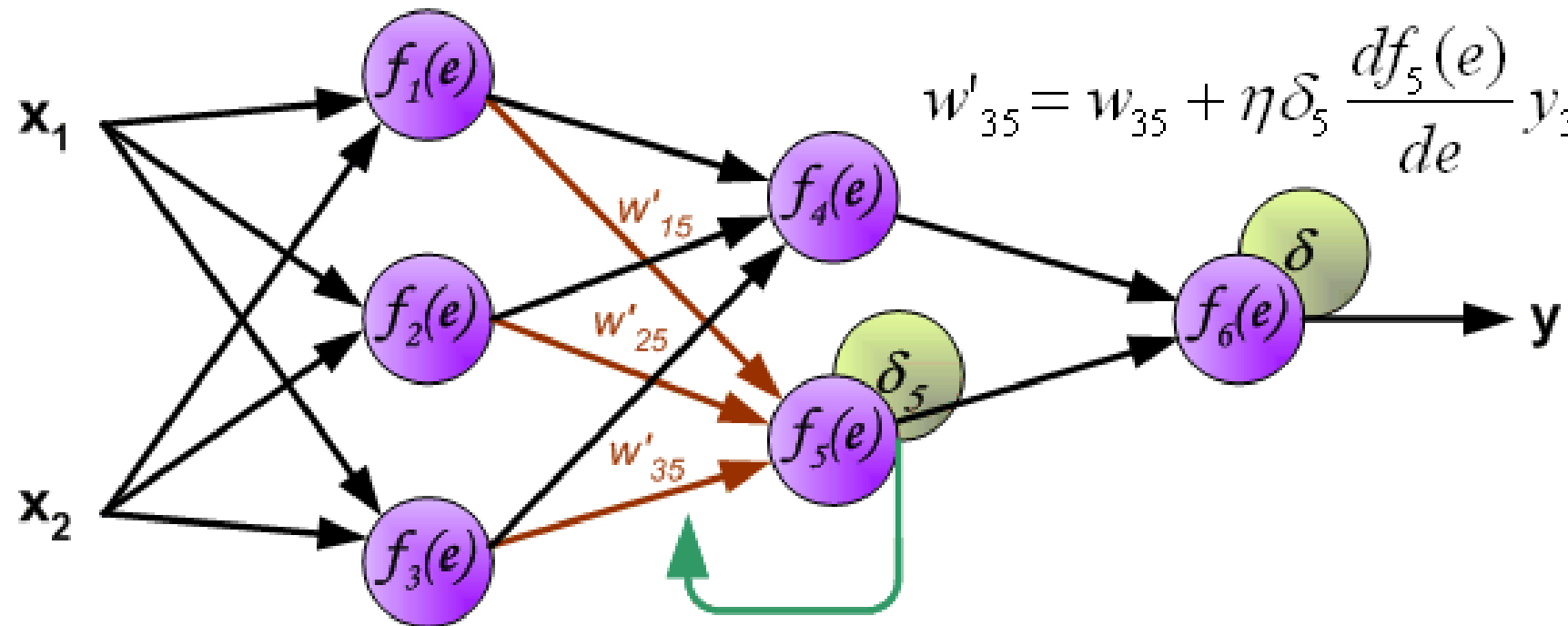
$$w'_{34} = w_{34} + \eta \delta_4 \frac{df_4(e)}{de} y_3$$

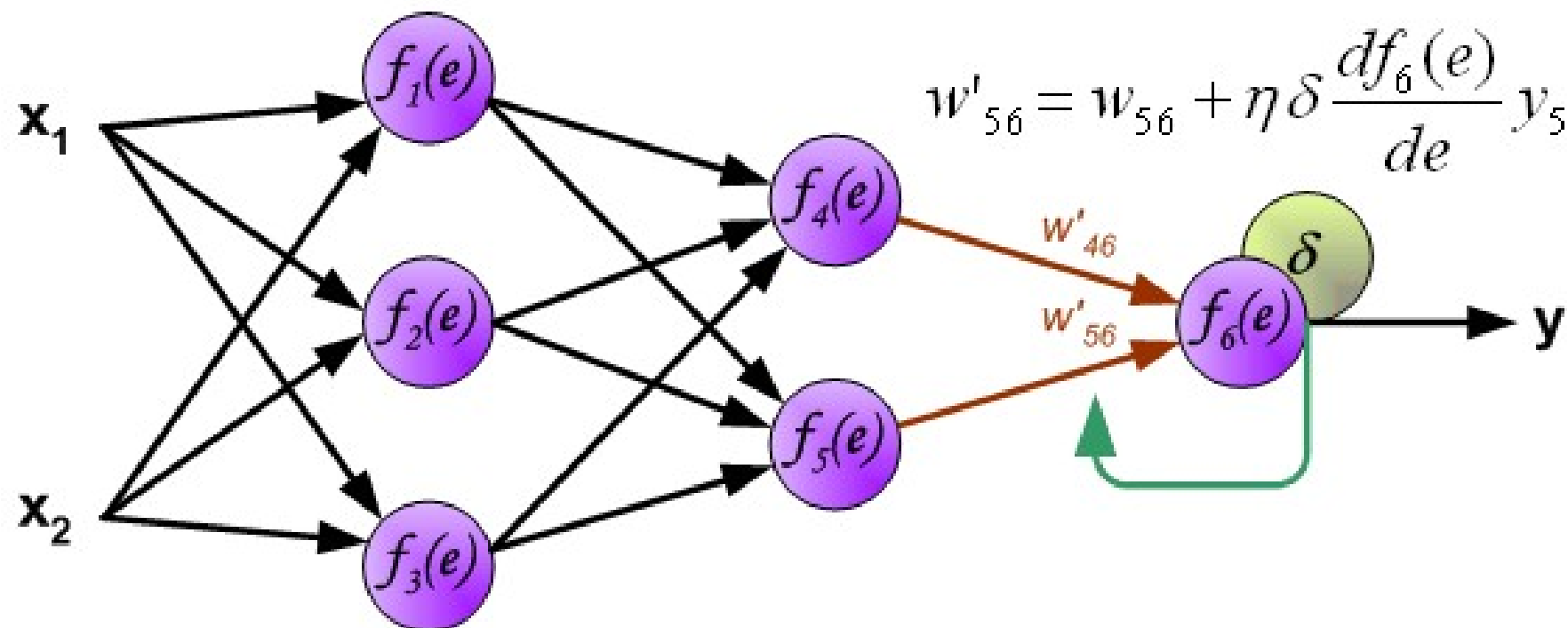


$$w'_{15} = w_{15} + \eta \delta_5 \frac{df_5(e)}{de} y_1$$

$$w'_{25} = w_{25} + \eta \delta_5 \frac{df_5(e)}{de} y_2$$

$$w'_{35} = w_{35} + \eta \delta_5 \frac{df_5(e)}{de} y_3$$

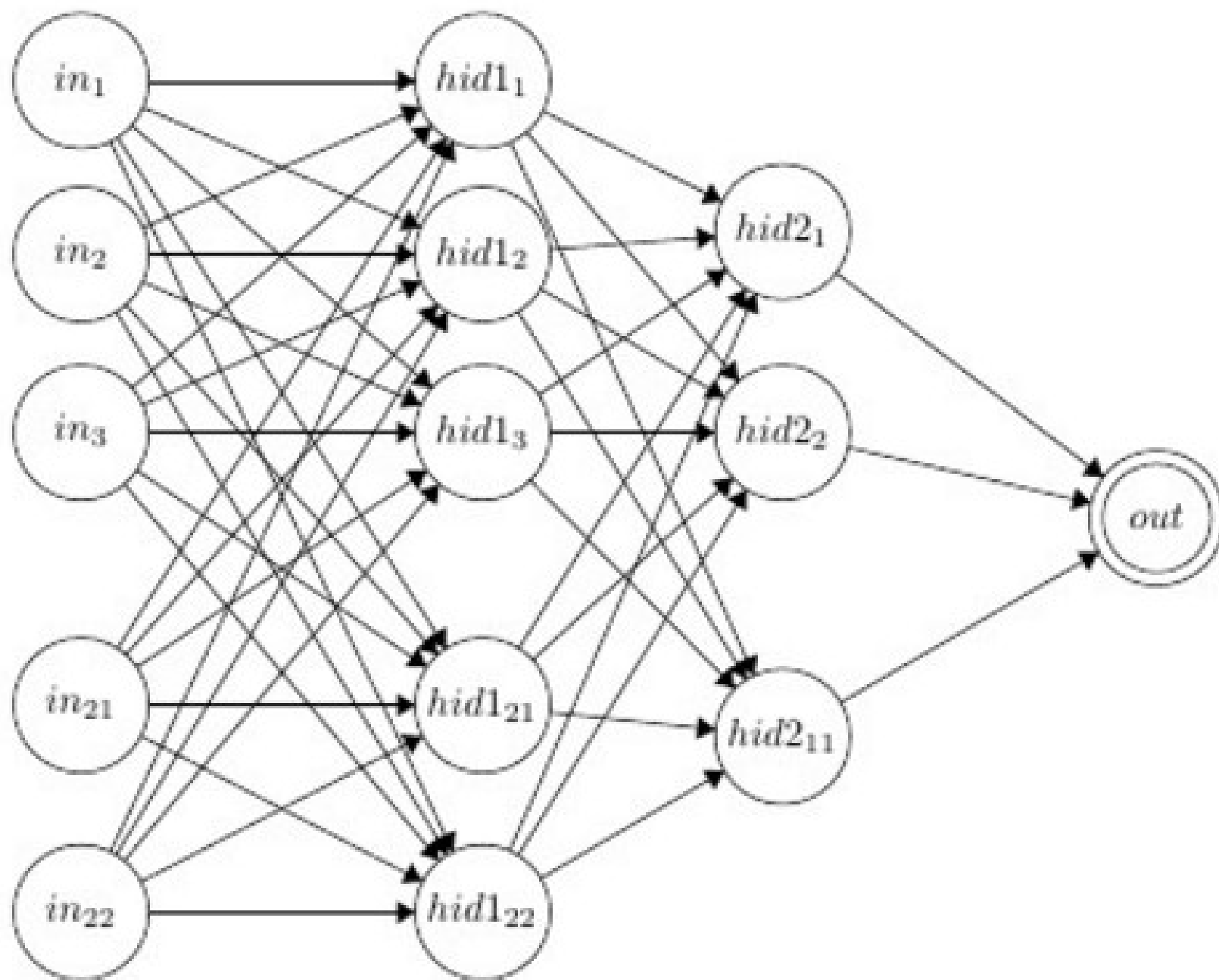




$$w'_{46} = w_{46} + \eta \delta \frac{df_6(e)}{de} y_4$$

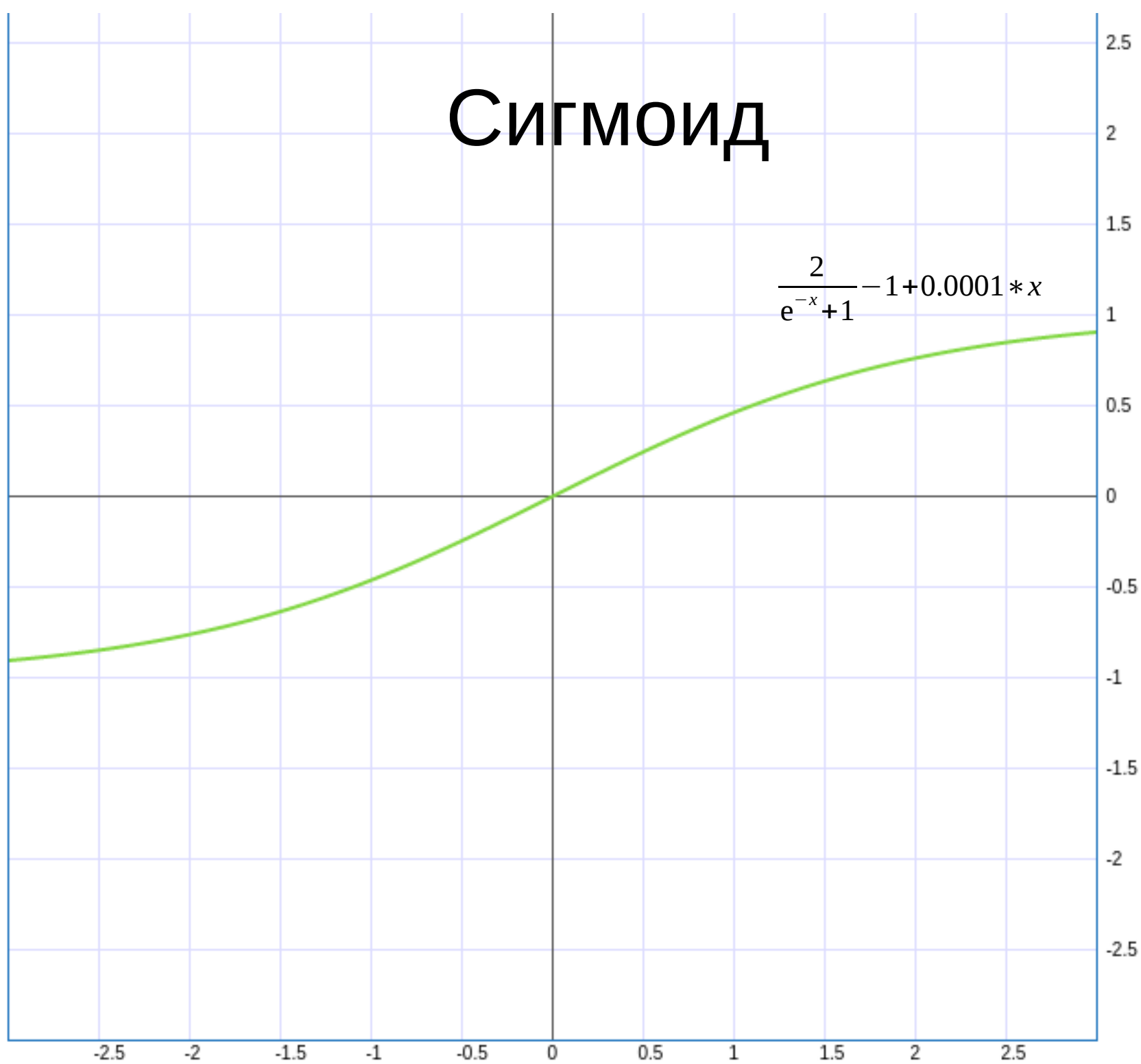
$$w'_{56} = w_{56} + \eta \delta \frac{df_6(e)}{de} y_5$$

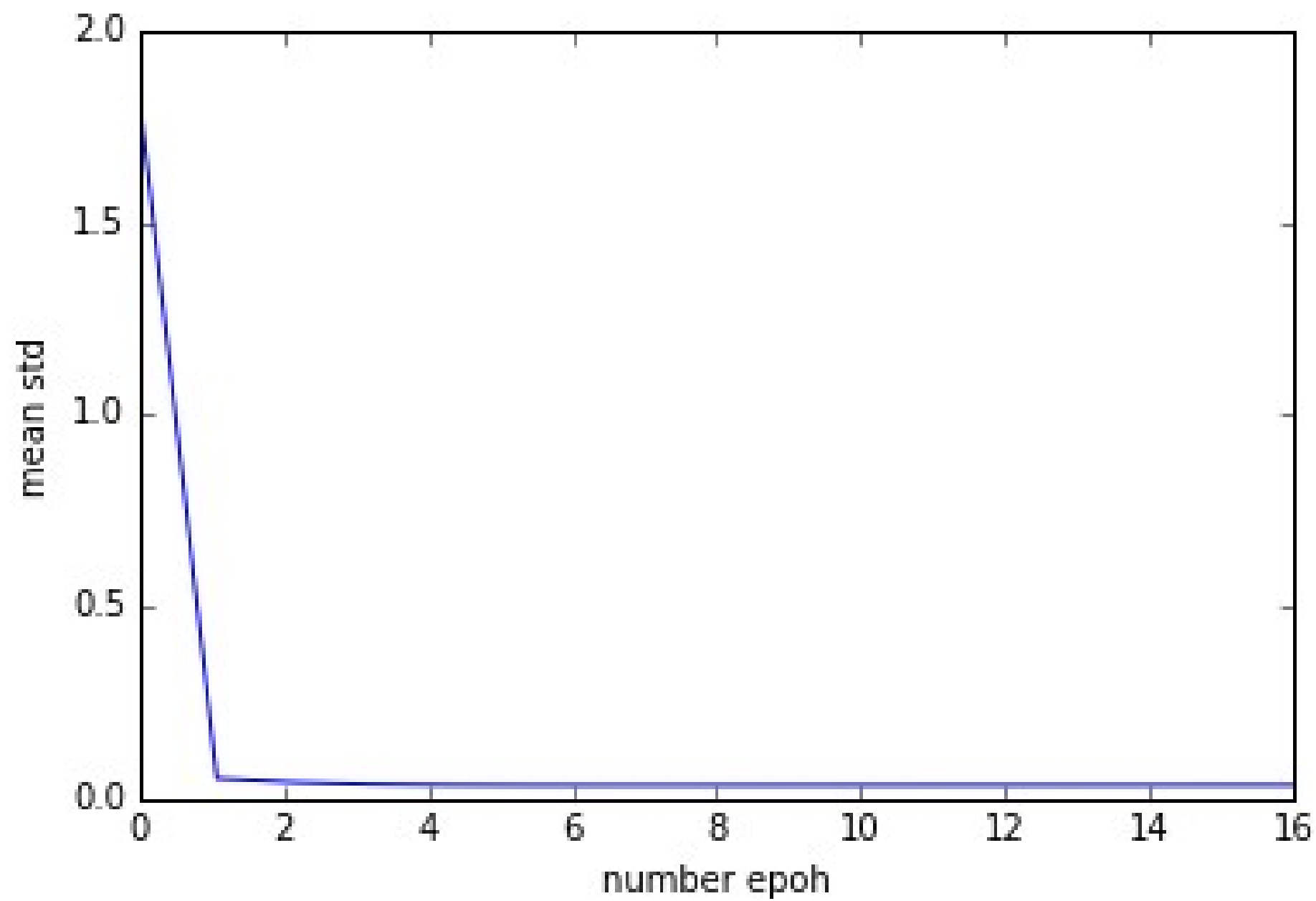
Третий Бот

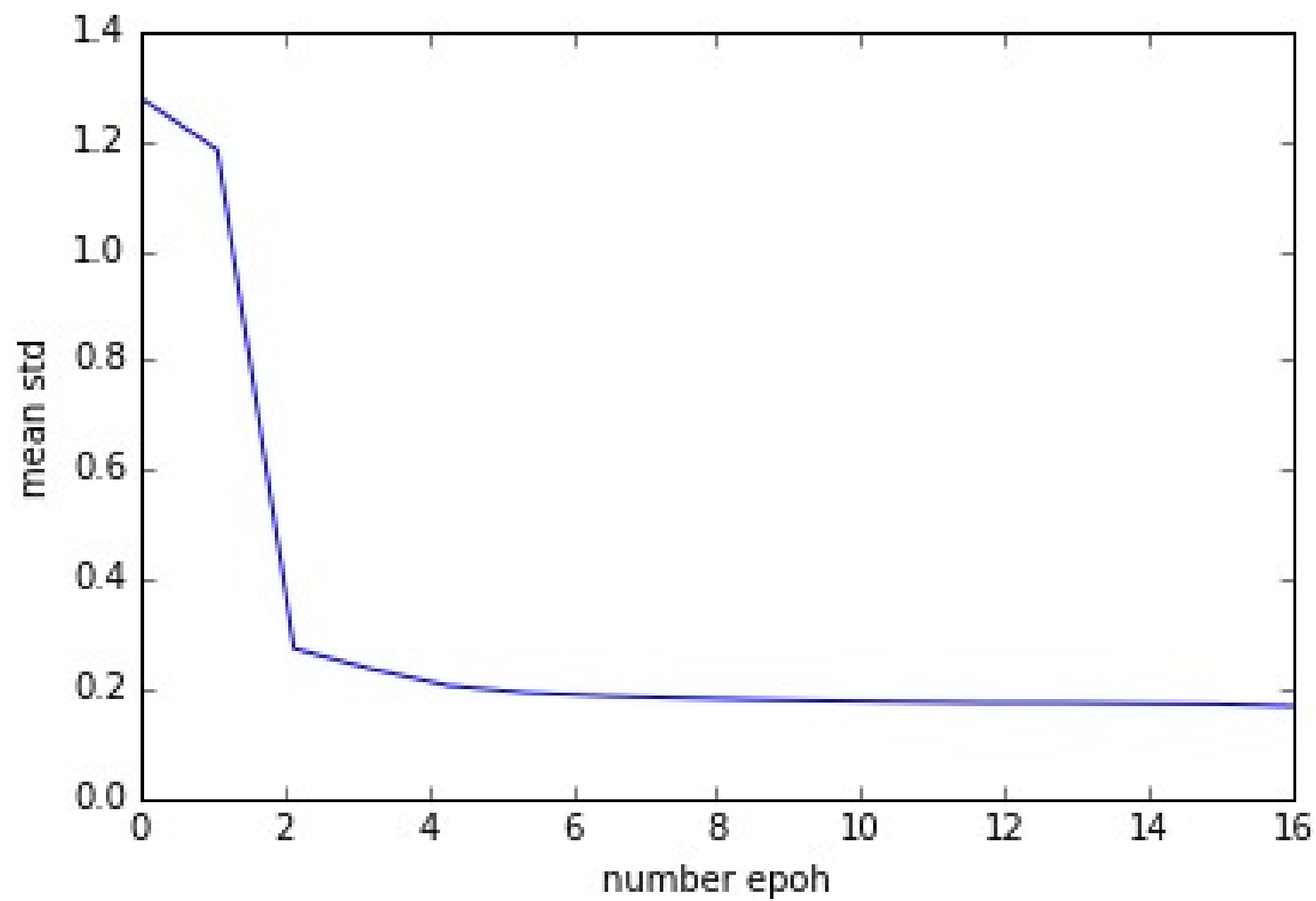


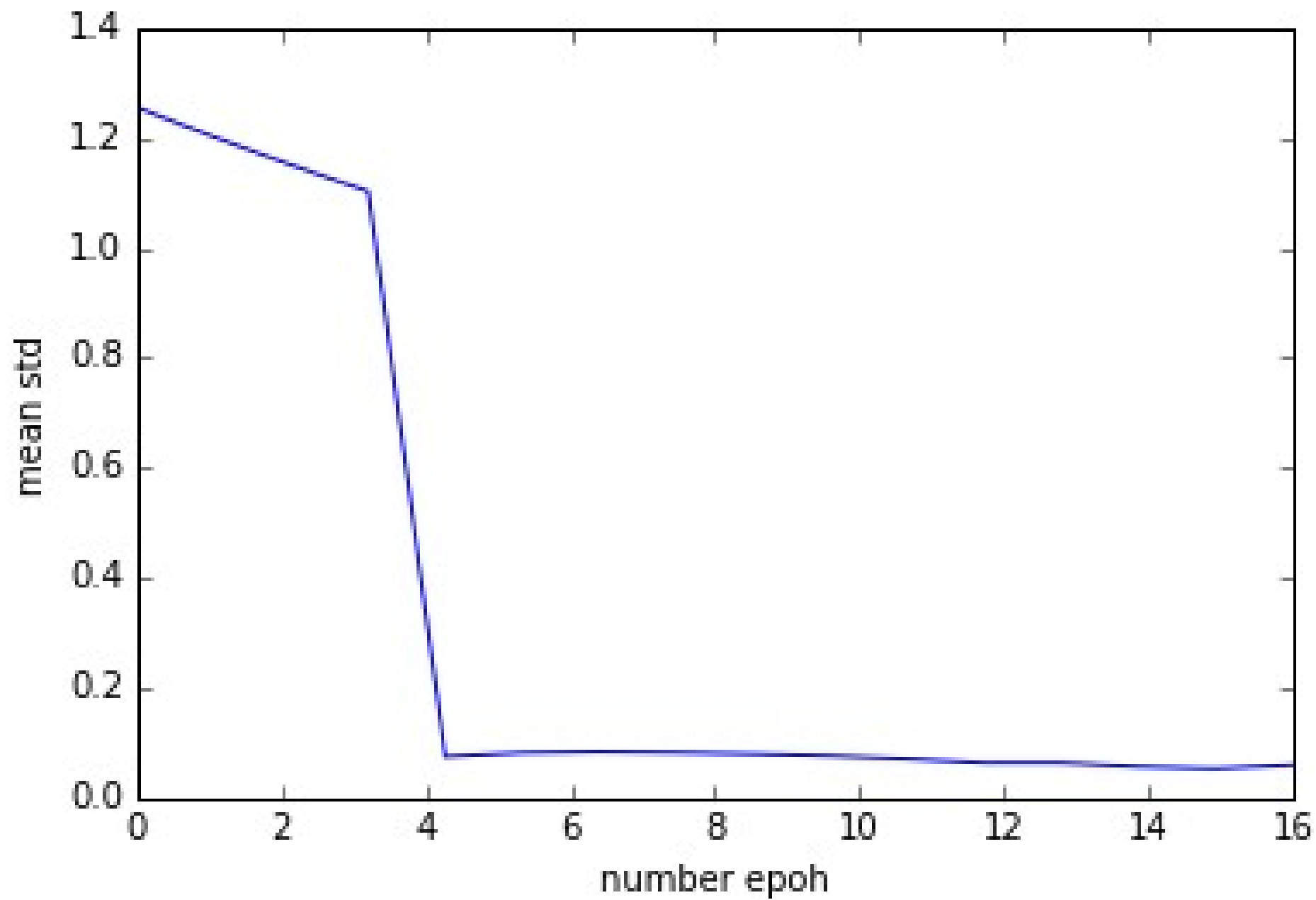
Сигмоид

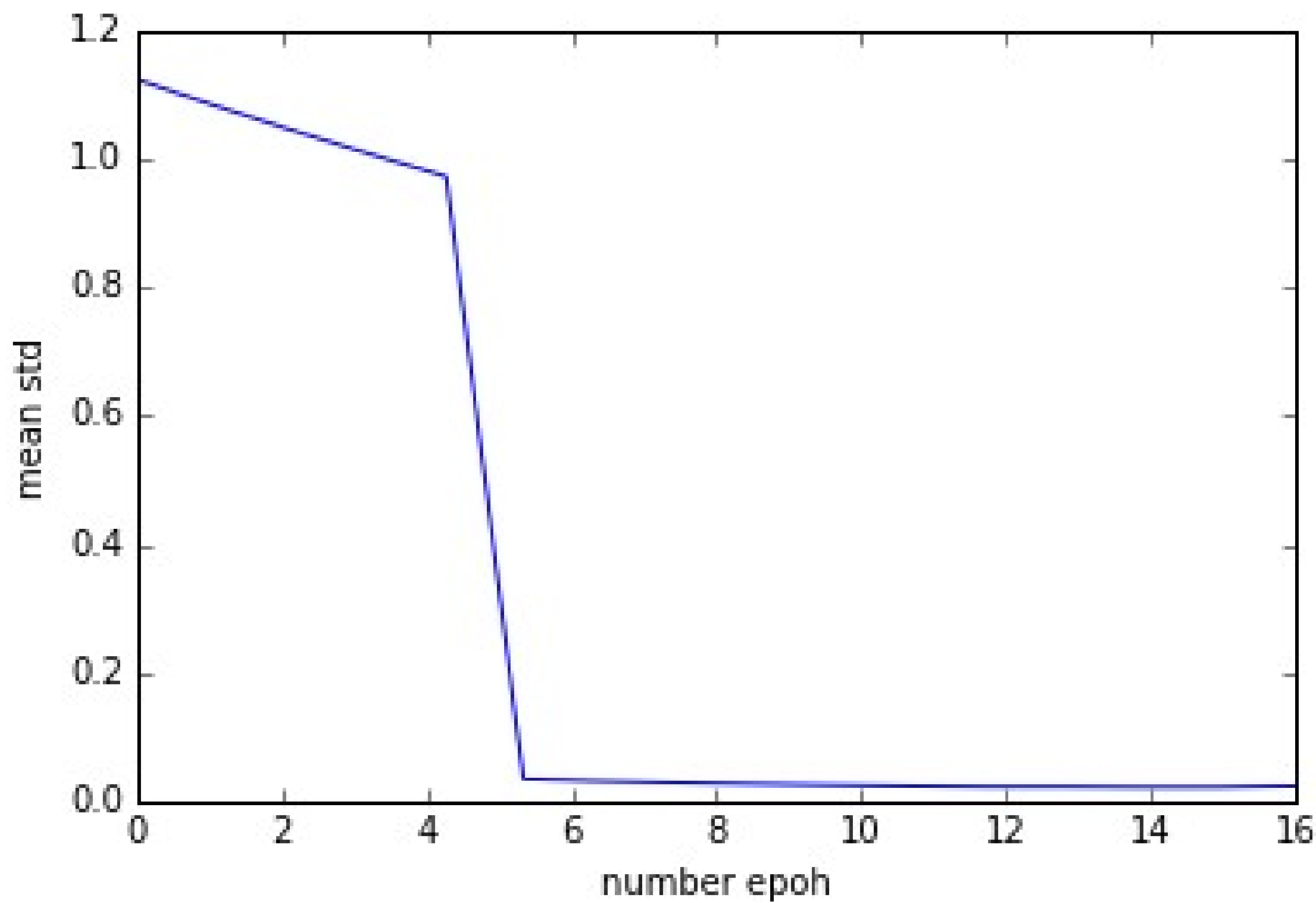
$$\frac{2}{e^{-x} + 1} - 1 + 0.0001 * x$$



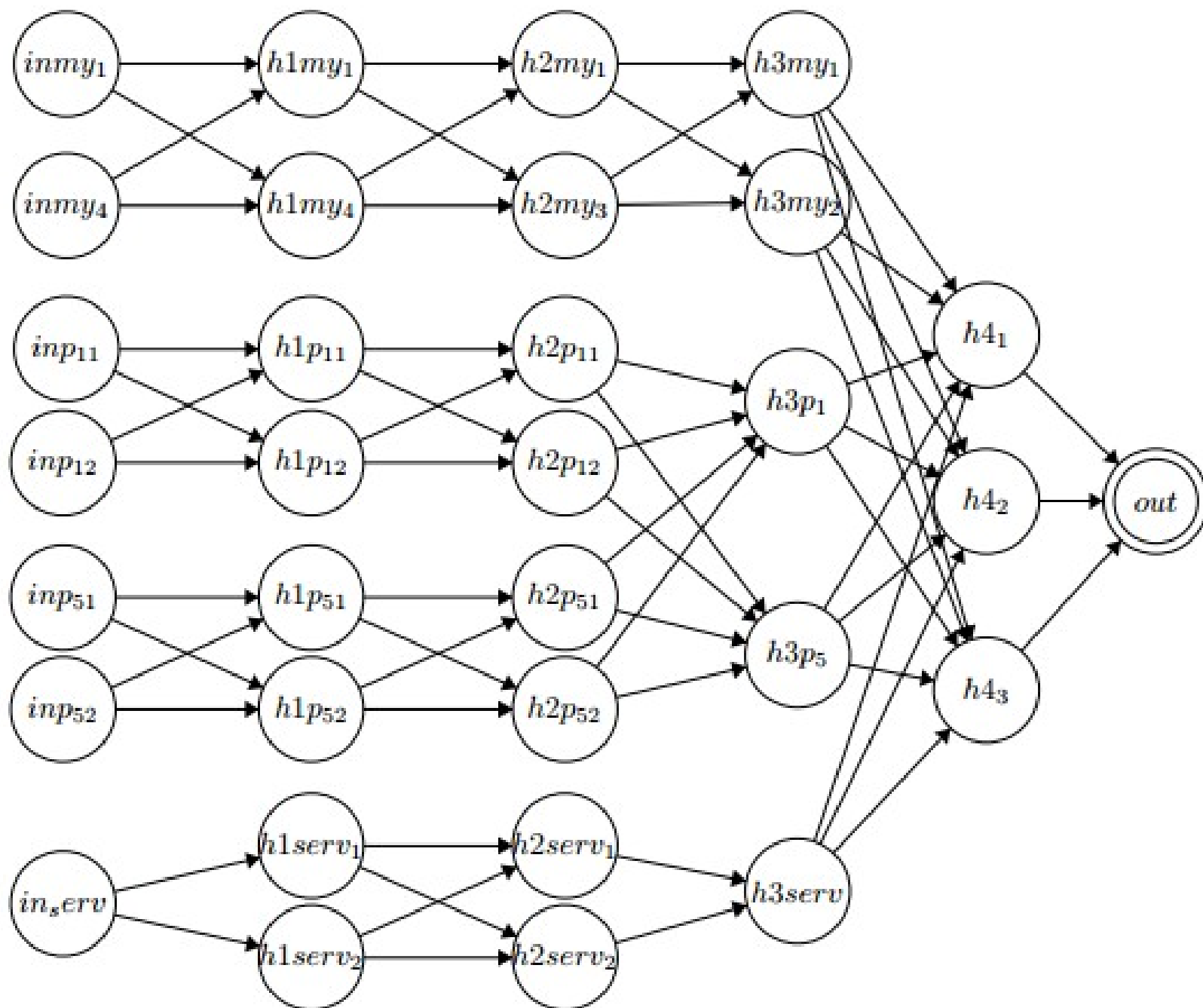




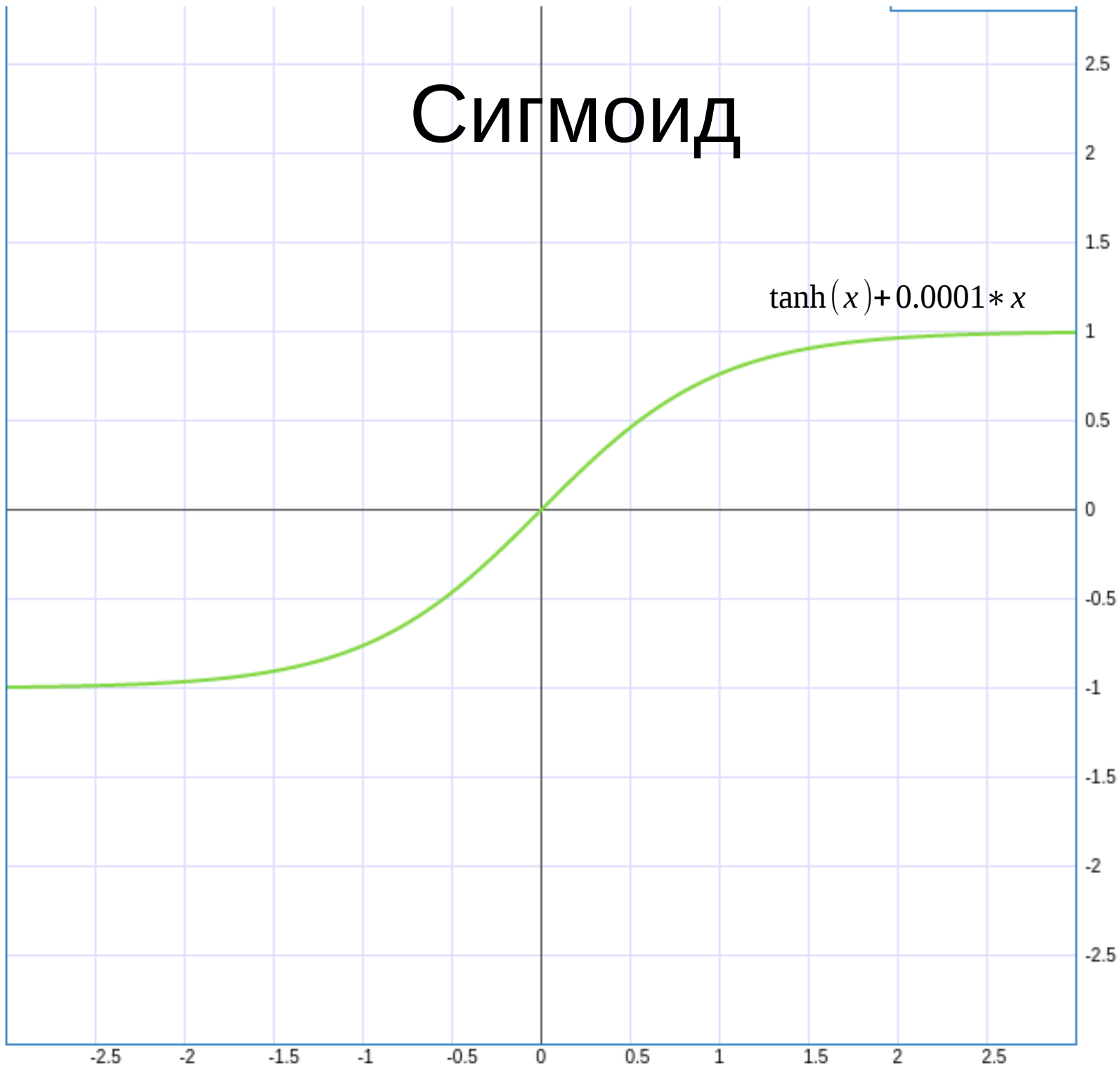




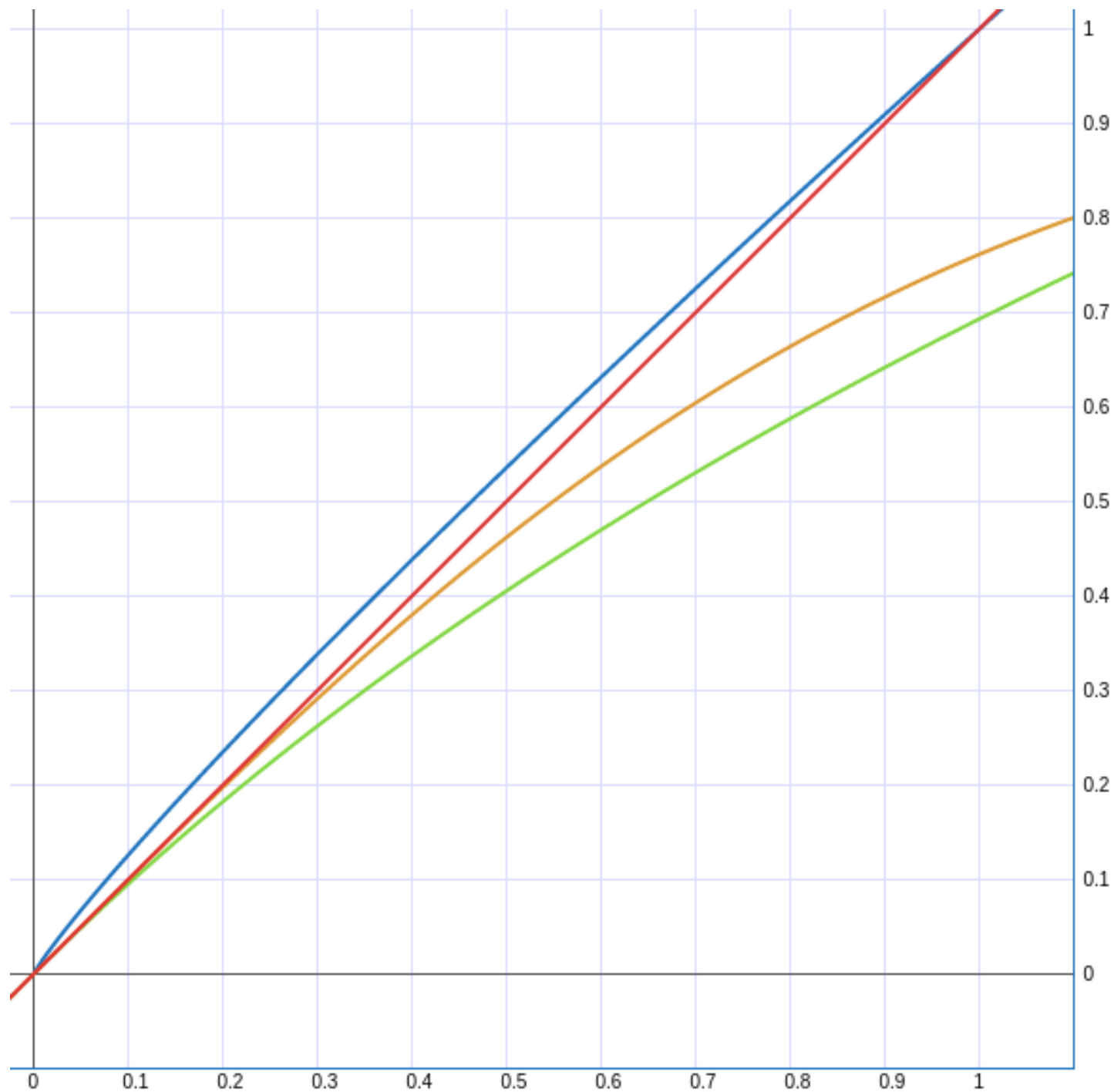
Четвертый Бот



СИГМОИД



Функция потерь



Blue — $x^{9/10}$
Red — x
Yellow — $\tanh(x)$
Green — $\log(1+x)$

Нестабильность на длинных дистанциях

login	bot2_0	bot2_1	bot2_2	bot1_3	bot1_4	bot4_5
cash	19560.00	35251.43	20577.84	13988.99	9103.97	26637.23
rebuy	0	0	0	0	0	0
MAX cash	22638.35	36210.73	42274.07	30089.00	20000.00	45076.33
MIN cash	0.00	19960.50	14091.02	13988.99	8600.27	1.80
COUNT all	672	672	672	672	672	672
COUNT won	120	118	118	101	102	118

login	bot2_0	bot2_1	bot2_2	bot1_3	bot1_4	bot4_5
cash	19559.00	17718.01	20577.84	13506.99	5967.12	47790.49
rebuy	0	0	0	0	0	0
MAX cash	22638.35	36210.73	42274.07	30089.00	20000.00	47790.49
MIN cash	0.00	17718.01	14091.02	13506.99	5967.12	1.80
COUNT all	673	673	673	673	673	673
COUNT won	120	118	118	101	102	119

login	bot2_0	bot2_1	bot2_2	bot1_3	bot1_4	bot4_5
cash	19558.50	17716.51	8663.97	12714.99	5967.12	32708.87
rebuy	0	0	0	0	0	0
MAX cash	22638.35	36210.73	42274.07	30089.00	20000.00	47790.49
MIN cash	0.00	17716.51	8663.97	12714.99	5967.12	1.80
COUNT all	676	676	676	676	676	676
COUNT won	120	118	119	101	102	121

login	bot2_0	bot2_1	bot2_2	bot1_3	bot1_4	bot4_5
cash	0.00	0.00	8079.97	12714.49	5966.12	70569.38
rebuy	0	0	0	0	0	0
MAX cash	22638.35	36210.73	42274.07	30089.00	20000.00	70569.38
MIN cash	0.00	0.00	8079.97	12714.49	5966.12	1.80
COUNT all	677	677	677	677	677	677
COUNT won	120	118	119	101	102	122

login	bot2_0	bot2_1	bot2_2	bot1_3	bot1_4	bot4_5
cash	14040.67	37719.83	10740.78	11454.99	4757.94	7070.71
rebuy	0	0	0	0	0	0
MAX cash	23780.67	37719.83	42274.07	30089.00	20000.00	70569.38
MIN cash	0.00	0.00	8079.97	11454.99	3481.44	1.80
COUNT all	690	690	690	690	690	690
COUNT won	122	122	122	101	103	125

login	bot2_0	bot2_1	bot2_2	bot1_3	bot1_4	bot4_5
cash	12096.34	10150.65	25466.25	9978.87	3020.64	95.26
rebuy	0	0	0	0	0	0
MAX cash	23780.67	37887.10	42274.07	30089.00	20000.00	70569.38
MIN cash	0.00	0.00	0.00	9978.87	1918.97	1.80
COUNT all	997	997	997	997	997	997
COUNT won	178	175	186	147	151	167

Проблема обучения на себе

login	bot4_0	bot4_1	bot4_2	bot4_3	bot4_4	bot4_5
cash	4874.50	3050.50	22985.50	3207.00	3202.00	2087.00
rebuy	0	0	0	0	0	0
MAX cash	40367.00	20000.00	40073.50	20665.00	20000.00	21680.50
MIN cash	4874.50	3050.50	16228.00	3205.50	3202.00	2087.00
COUNT all	805	805	805	805	805	805
COUNT won	138	62	454	59	47	45

login	bot4_0	bot4_1	bot4_2	bot4_3	bot4_4	bot4_5
cash	4874.50	3050.00	23044.00	3193.00	3158.00	2087.00
rebuy	0	0	0	0	0	0
MAX cash	40367.00	20000.00	40073.50	20665.00	20000.00	21680.50
MIN cash	4874.50	3050.00	16228.00	3193.00	3158.00	2087.00
COUNT all	807	807	807	807	807	807
COUNT won	138	62	456	59	47	45

После 500 игр, \$	После 3000+ игр,\$
-39640.7	-12586.8
-39848.1	-14573.7
-39945.3	25628.3
-15060.3	79118.9
-39978.6	3258.2
42480.9	42316.4
-35554.5	981.5
25878.6	18655.2
-39842.2	128513.9
-19118.8	41918.8