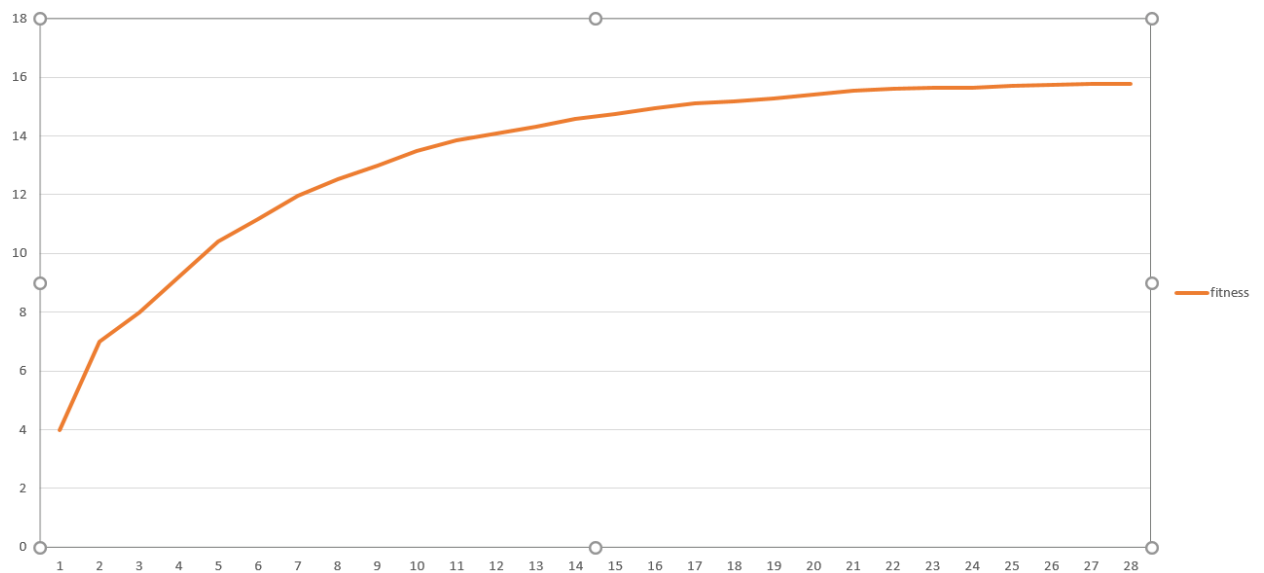


Evolving neural network

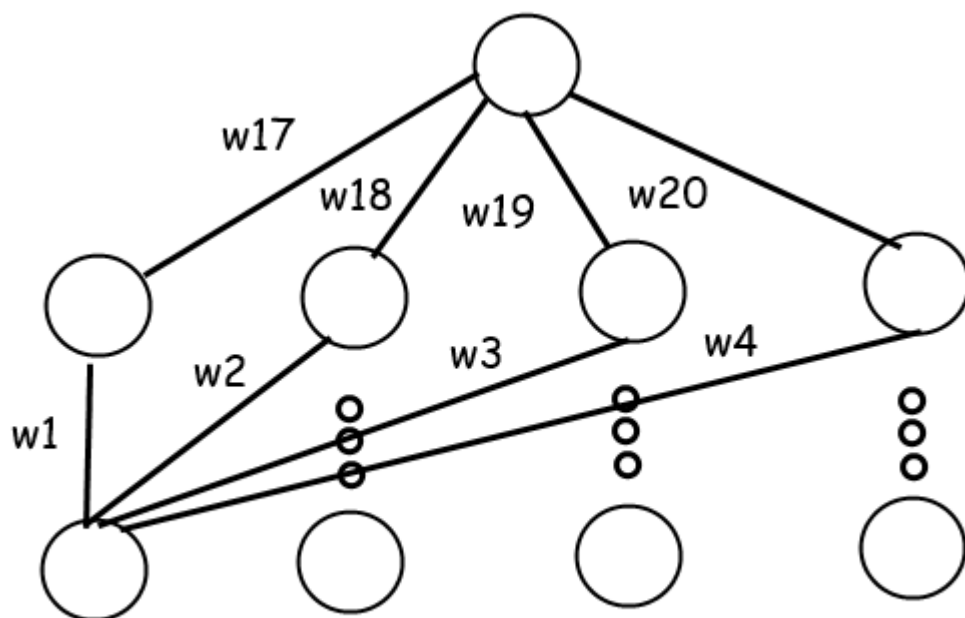
Scenario 1:

- Chromosomes – 20;
- Genes – 20;
- Crossover – one point at 10 position;
- Selection – Truncation;
- Mutation – 1% percent;

Graphic:
fitness



Network:



The 1st generation

X1	X2	X3	X4	Yreal	Y	Result
-1	-1	-1	-1	1	1	o
-1	-1	-1	1	1	-1	x
-1	-1	1	-1	1	-1	x
-1	-1	1	1	-1	1	x
-1	1	-1	-1	-1	-1	o
-1	1	-1	1	-1	1	x
-1	1	1	-1	-1	1	x
-1	1	1	1	1	-1	x
1	-1	-1	-1	-1	-1	o
1	-1	-1	1	-1	1	x
1	-1	1	-1	-1	1	x
1	-1	1	1	-1	-1	o
1	1	-1	-1	-1	1	x
1	1	-1	1	1	-1	x
1	1	1	-1	1	-1	x
1	1	1	1	-1	1	x

Fitness - 4

Weights: -0,8582 0,7664 -0,1388 -0,0354 0,4026 0,7504 -0,7756 0,9519 -0,2282 0,8853 0,4202
0,4807 -0,4299 -0,8479 -0,2432 0,8043 0,5922 -0,9208 -0,8143 0,7517

The Middle generation

X1	X2	X3	X4	Yreal	Y	Result
-1	-1	-1	-1	1	1	o
-1	-1	-1	1	1	-1	x
-1	-1	1	-1	-1	-1	o
-1	-1	1	1	-1	-1	o
-1	1	-1	-1	1	1	o
-1	1	-1	1	-1	1	x
-1	1	1	-1	-1	1	x
-1	1	1	1	-1	-1	o
1	-1	-1	-1	1	-1	x
1	-1	-1	1	1	1	o
1	-1	1	-1	-1	1	x
1	-1	1	1	-1	-1	o
1	1	-1	-1	-1	1	x
1	1	-1	1	1	-1	x
1	1	1	-1	-1	-1	o
1	1	1	1	1	1	o

Fitness - 9

Weights: 0,5827 0,1317 0,5562 -0,7616 -0,0696 0,2915 0,0141 0,3921 -0,5469 0,7671 0,6330
0,1552 0,0981 0,2198 0,7801 -0,8702 0,6056 0,3654 -0,5380 0,1227

The Last generation

X1	X2	X3	X4	Yreal	Y	Result
-1	-1	-1	-1	1	1	o
-1	-1	-1	1	-1	-1	o
-1	-1	1	-1	-1	-1	o
-1	-1	1	1	1	1	o
-1	1	-1	-1	-1	-1	o
-1	1	-1	1	1	1	o
-1	1	1	-1	1	1	o
-1	1	1	1	-1	-1	o
1	-1	-1	-1	-1	-1	o
1	-1	-1	1	1	1	o
1	-1	1	-1	1	1	o
1	-1	1	1	-1	-1	o
1	1	-1	-1	1	1	o
1	1	-1	1	-1	-1	o
1	1	1	-1	-1	-1	o
1	1	1	1	1	1	o

Fitness - 16;

Weights: -0,5130 0,4700 -0,2218 0,5920 -0,3334 -0,2672 0,9082 -0,7796 -0,4741 0,0726 -0,0829
0,1498 0,9845 0,1083 0,3654 -0,7516 -0,6847 0,0051 -0,6983 0,7620