

Dzianis Palchuk II-10
Lab5. Multi-fitness functions (28.10.2016)

Diagram1. Original functions

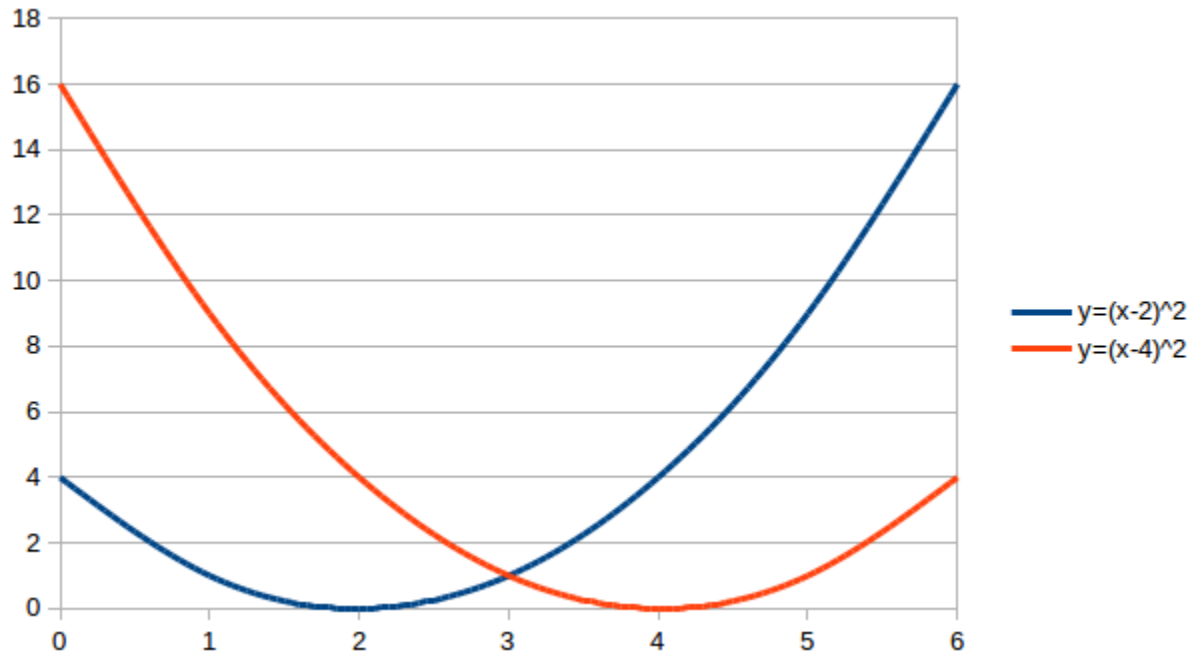


Diagram2. Average and max rank value by iteration

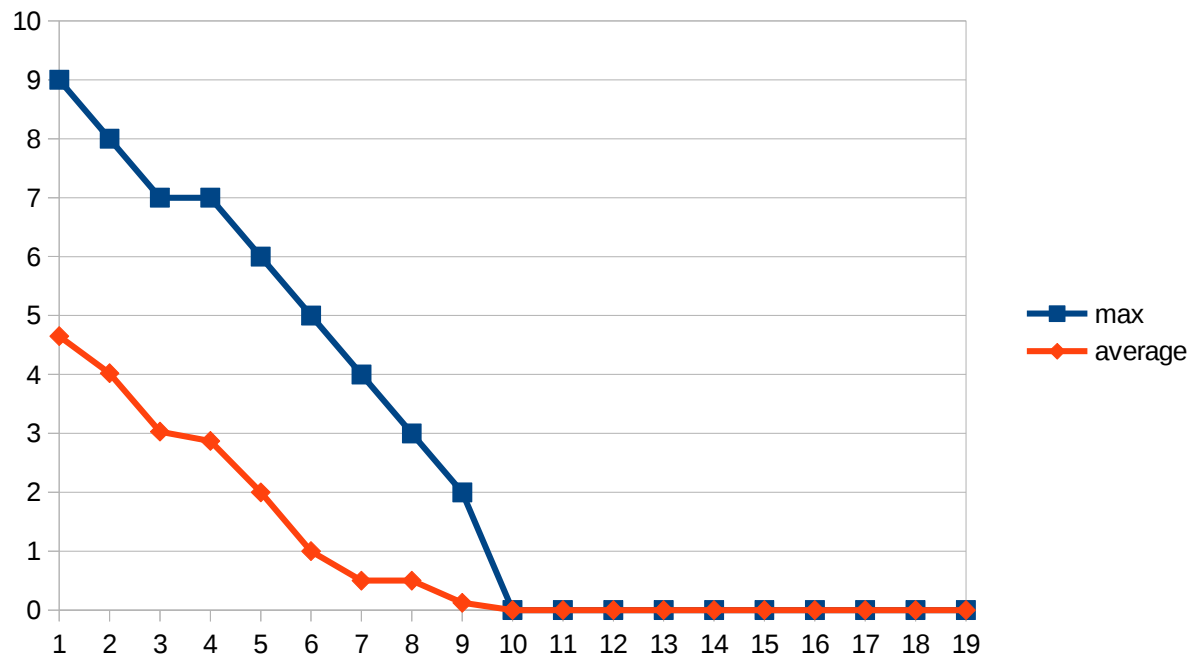
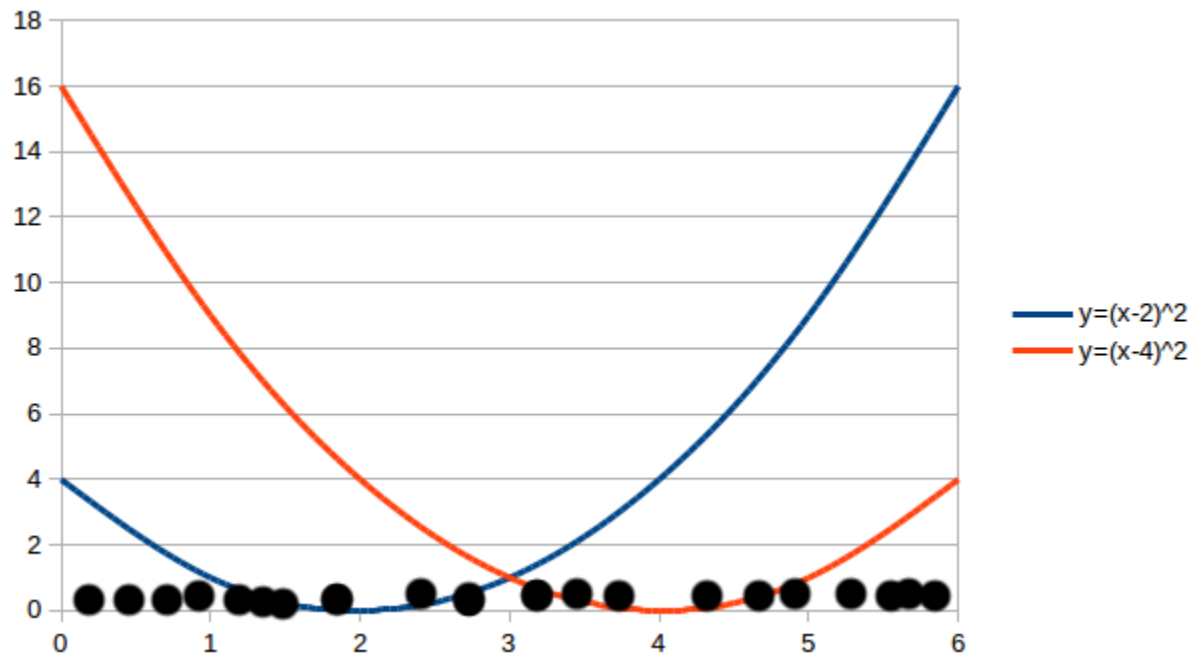
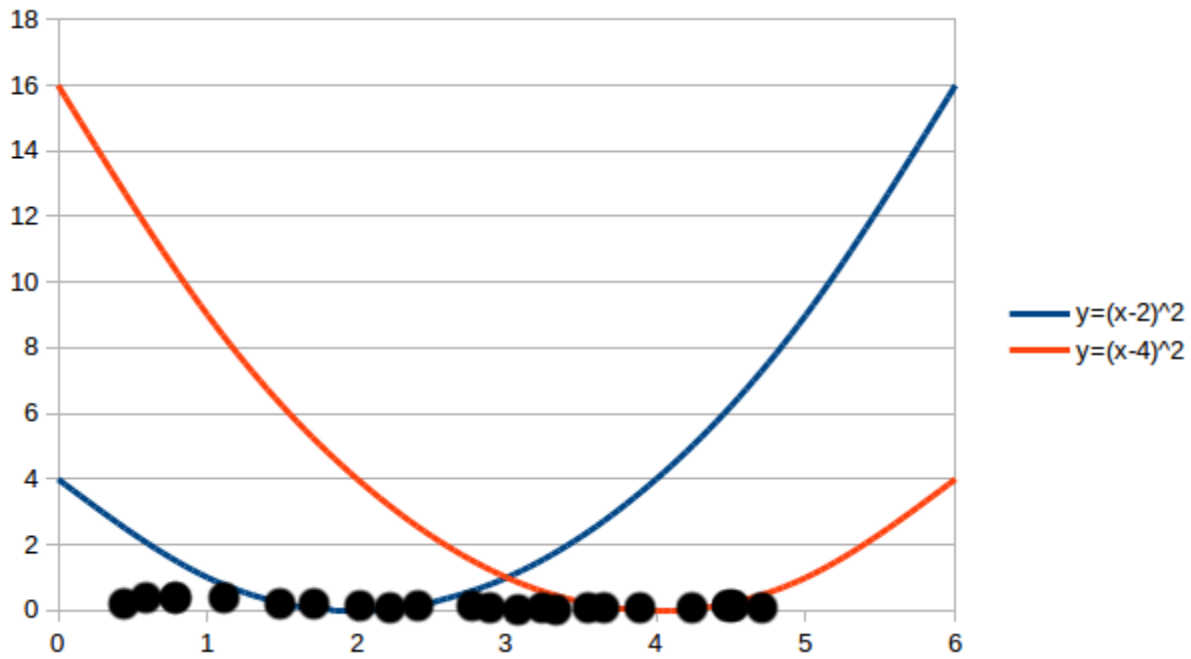


Diagram4. Points at the first iteration



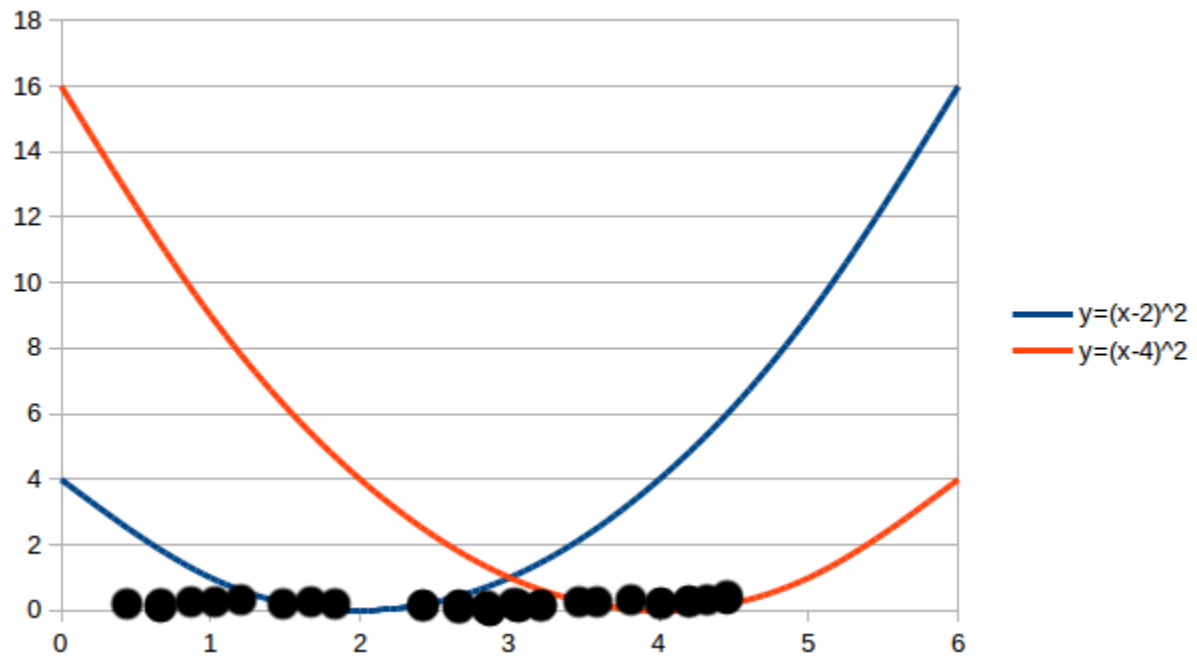
Chromosome	X-value	$(x-2)^2$	$(x-4)^2$	Rank
0000010110	0.13	3.4969	14.9769	0
0001001000	0.42	2.4964	12.8164	1
0010000010	0.76	1.5376	10.4976	2
0010011101	0.92	1.1664	9.4864	3
0011000111	1.17	0.6889	8.0089	4
0011100001	1.32	0.4624	7.1824	5
0100000101	1.53	0.2209	6.1009	6
0100111000	1.83	0.0289	4.7089	7
0110100011	2.46	0.2116	2.3716	9
0111010000	2.72	0.5184	1.6384	8
1000010010	3.11	1.2321	0.7921	8
1001011010	3.53	2.3409	0.2209	8
0111100100	2.84	0.7056	1.3456	8
1011011000	4.27	5.1529	0.0729	6
1100011110	4.68	7.1824	0.4624	5
1101001010	4.94	8.6436	0.8836	4
1101111000	5.21	10.3041	1.4641	3
1110101000	5.49	12.1801	2.2201	2
1110111110	5.62	13.1044	2.6244	1
1111100010	5.83	14.6689	3.3489	0

Diagram5. Points at the second status



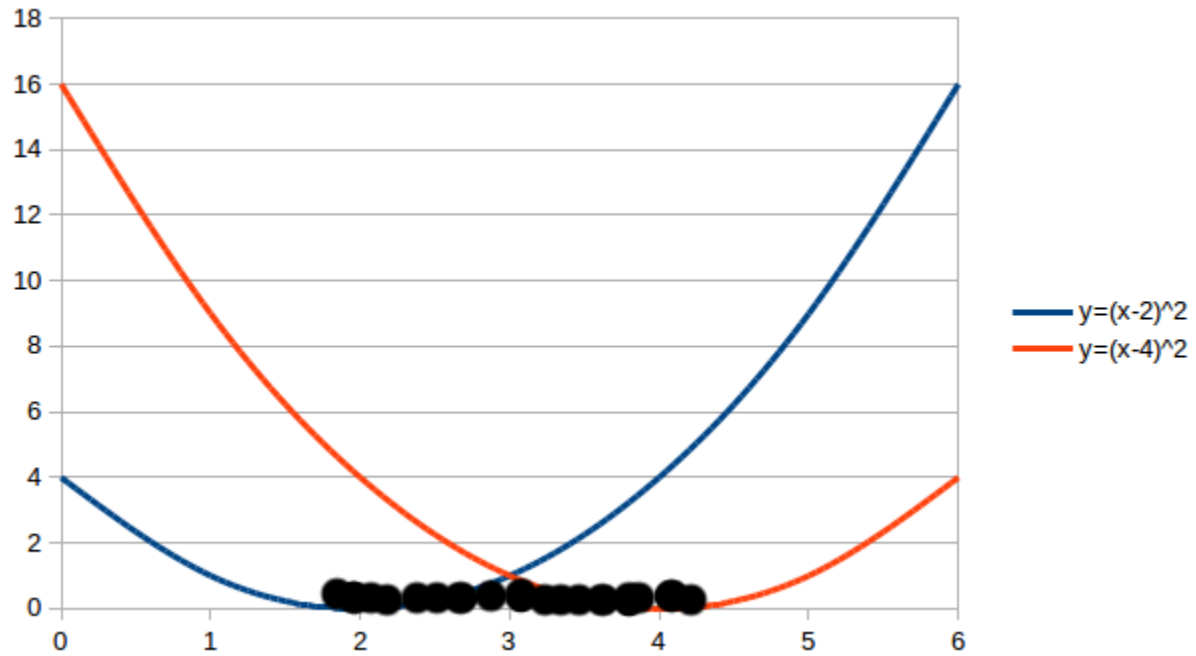
Chromosome	X-value	$(x-2)^2$	$(x-4)^2$	Rank
0001000110	0.41	2.5281	12.8881	0
0001011001	0.52	2.1904	12.1104	1
0001111001	0.71	1.6641	10.8241	2
0011000100	1.15	0.7225	8.1225	3
0011110111	1.45	0.3025	6.5025	4
0100010110	1.63	0.1369	5.6169	5
0101010111	2.01	0.0001	3.9601	6
0110001101	2.33	0.1089	2.7889	6
0110100011	2.46	0.2116	2.3716	5
0111011111	2.81	0.6561	1.4161	4
0111110100	2.93	0.8649	1.1449	3
1000100000	3.19	1.4161	0.6561	3
1000100111	3.23	1.5129	0.5929	3
1000111011	3.35	1.8225	0.4225	3
1001011000	3.52	2.3104	0.2304	3
1001101000	3.61	2.5921	0.1521	2
1010010111	3.89	3.5721	0.0121	3
1011101011	4.38	5.6644	0.1444	2
1100000001	4.51	6.3001	0.2601	1
1100011110	4.68	7.1824	0.4624	0

Diagram6. Points at the middle status



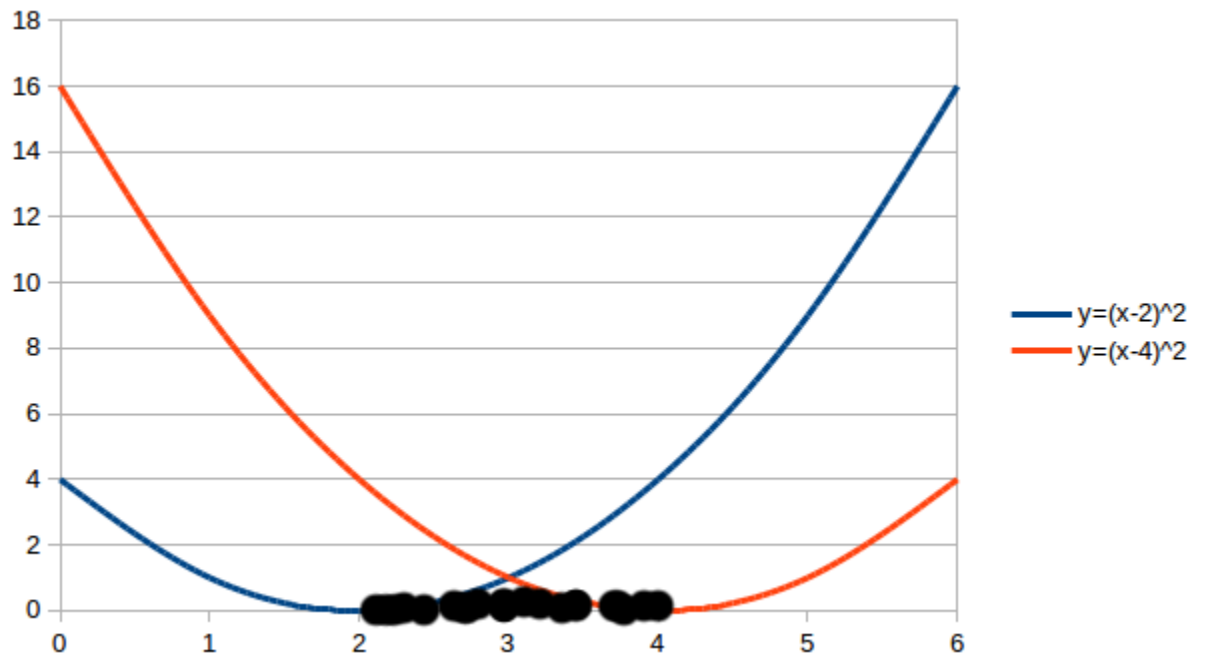
Chromosome	X-value	$(x-2)^2$	$(x-4)^2$	Rank
0001010010	0.48	2.3104	12.3904	0
0001101000	0.61	1.9321	11.4921	1
0010010001	0.85	1.3225	9.9225	2
0010101110	1.02	0.9604	8.8804	3
0011010101	1.25	0.5625	7.5625	4
0100000011	1.52	0.2304	6.1504	5
0100011110	1.68	0.1024	5.3824	6
0100110001	1.79	0.0441	4.8841	7
0110011110	2.43	0.1849	2.4649	6
0110111101	2.61	0.3721	1.9321	5
0111101101	2.89	0.7921	1.2321	4
1000000101	3.03	1.0609	0.9409	3
1000101000	3.24	1.5376	0.5776	2
1001010000	3.47	2.1609	0.2809	1
1001011111	3.56	2.4336	0.1936	1
1001111100	3.73	2.9929	0.0729	3
1010101100	4.01	4.0401	0.0001	3
1011011111	4.31	5.3361	0.0961	2
1011101001	4.37	5.6169	0.1369	1
1011111110	4.49	6.2001	0.2401	0

Diagram 7.Points at the 4th status



Chromosome	X-value	$(x-2)^2$	$(x-4)^2$	Rank
0100100100	1.71	0.0841	5.2441	0
0101000010	1.89	0.0121	4.4521	1
0101101000	2.11	0.0121	3.5721	2
0110000000	2.25	0.0625	3.0625	1
0110011011	2.41	0.1681	2.5281	0
0110101111	2.53	0.2809	2.1609	0
0111001011	2.69	0.4761	1.7161	0
0111011111	2.81	0.6561	1.4161	0
1000010100	3.12	1.2544	0.7744	0
1000100011	3.21	1.4641	0.6241	0
1000111011	3.35	1.8225	0.4225	0
1001011000	3.52	2.3104	0.2304	0
1001110101	3.69	2.8561	0.0961	0
1001111001	3.71	2.9241	0.0841	0
1010001011	3.82	3.3124	0.0324	2
1011001010	4.19	4.7961	0.0361	1
1011010011	4.24	5.0176	0.0576	0
1011011111	4.31	5.3361	0.0961	2
1011101001	4.37	5.6169	0.1369	1
1011111110	4.49	6.2001	0.2401	0

Diagram 8. Points at the last iteration



Chromosome	X-value	$(x-2)^2$	$(x-4)^2$	Rank
0101101001	2.12	0.0144	3.5344	0
0101111100	2.23	0.0529	3.1329	0
0110010110	2.38	0.1444	2.6244	0
0110011011	2.41	0.1681	2.5281	0
0110100101	2.47	0.2209	2.3409	0
0110110001	2.54	0.2916	2.1316	0
0111000111	2.67	0.4489	1.7689	0
0111010101	2.75	0.5625	1.5625	0
0111101001	2.87	0.7569	1.2769	0
0111111001	2.96	0.9216	1.0816	0
1000100000	3.19	1.4161	0.6561	0
1000111011	3.35	1.8225	0.4225	0
1000111101	3.36	1.8496	0.4096	0
1001000101	3.41	1.9881	0.3481	0
1001010011	3.49	2.2201	0.2601	0
1001101000	3.61	2.5921	0.1521	0
1001111010	3.72	2.9584	0.0784	0
1010000110	3.79	3.2041	0.0441	0
1010010000	3.85	3.4225	0.0225	0
1010011100	3.92	3.6864	0.0064	0